

No 1,2,4-6

VOL. I.

JULY, 1896.

No. 1.

THE LARYNGOSCOPE

A MONTHLY JOURNAL
DEVOTED TO DISEASES OF THE

NOSE - THROAT - EAR

FOR GENERAL PRACTITIONERS AND SPECIALISTS.

11
1896

EDITORS.

FRANK M. RUMBOLD, M.D.

M. A. GOLDSTEIN, M.D.

ASSOCIATE EDITORS.

M. D. LEDERMAN, M.D.
New York.

S. SCOTT BISHOP, M.D.
Chicago.

W. SCHEPPEGRELL, M.D.
New Orleans.

F. B. EATON, M.D.
San Jose, Cal.

FOREIGN EDITORS.

DR. J. DUNDAS GRANT,
London.

DR. VICTOR URBANTSCHITSCH,
Vienna.

DR. J. J. KIRK DUNCANSON,
Edinburgh.

DR. A. HARTMANN,
Berlin.

DR. J. K. KIMURA,
Tokio.

DR. G. STERLING RYERSON,
Toronto.

FOR CONTENTS SEE NEXT PAGE.

SUBSCRIPTION, \$2.00 PER ANNUM, IN ADVANCE.

P. O. BOX 787.

ST. LOUIS, MO.

OFFICE OF PUBLICATION, 707 OLIVE STREET.

CONTENTS.

ORIGINAL COMMUNICATIONS.

On the Photo-Fluoroscope. By J. Mount Bleyer, M.D., F.R.A.M.S., of New York. [ILLUSTRATED]	9	By J. Dundas Grant, M.D., F.R.C.S., London. [ILLUSTRATED]	33
Hay Fever and its Successful Treatment. By Seth Scott Bishop, M.D., LL.D., of Chicago. [ILLUSTRATED]	21	Extensive Necrosis of the Petro-Mastoid following Middle-Ear Suppuration. By M. D. Lederman, M.D., New York	42
Lingual Tonsils. By Edwin R. Lewis, A.M., M.D., Indianapolis, Ind	29	Post-Nasal Adenoid Hypertrophy: with Especial Reference to the Importance of its Early Recognition by the Family Physician. By J. E. Schadle, M.D., St. Paul, Minn. [ILLUSTRATED]	46
The Clinical Investigation of Ear Diseases.			

NEW INSTRUMENTS.

A New Nasal Saw, to be Run with the Electro-Motor. By G. Melville Black, M.D., Denver, Colo. [ILLUSTRATED]	56
--	----

EDITORIAL DEPARTMENT.

EDITORIALS.

Our Name	59	Our Prospects	60
Our Associates	60	News Items	60
To our Friends	60	What the Progressive Doctor Needs	61
We Request your Co-operation	60		

SELECTIONS FROM CURRENT MEDICAL PUBLICATIONS.

RHINOLOGICAL.

The Etiology and Treatment of Post-Nasal Catarrh	63	A New Position for Major-Nasal Operations ..	63
		Sarcoma Presenting in the Nasal Fossa	64

LARYNGOLOGICAL.

Diseases of the Mouth, Nose and Throat as Pathological Factors in Gastritis	64	Hypertrophy of the Lingual Tonsil	66
Serum for Tuberculosis	65	Traumatic Hæmatoma of the Right Pyriform Sinus	67
Asthma	65	Anglo-Neurotic Œdema	67
Post-Diphtheritic Paralysis	65	Some Recent Improvements in the Treatment of Laryngeal Disease	67
A Case of Death from the Administration of Nitrous Oxide	66		

OTOLOGICAL.

Contribution to the Bacteriology of Otitis Media Purulenta	68	The Importance of Making a Careful Examination of the Ear, Nose and Throat, from a Medico-Legal Standpoint	69
Epithelioma of the Temporal Bone	68	Acute Hæmatoma of the Left External Auditory Canal	69
Treatment of Abscesses of the Auditory Canal	69		

NEW INSTRUMENTS.

An Electro-Magnetic Tube Extractor	70	A New Apparatus for Uninterrupted Anæsthesia. [ILLUSTRATED]	70
Superfluous Tooth in the Floor of the Nostril	70	A New Nasal Splint	72
An Improved Pus Basin	70		

Contributors to the LARYNGOSCOPE who desire reprints will please communicate with the Commercial Printing Company, 318 N. Third Street, St. Louis, Mo., stating the number they wish, at the same time that they forward the MSS. to the Editors. Upon receipt of such letter, the Commercial Printing Company will send advices as to cost, and Authors will be enabled to perfect arrangements without delay.



THE LARYNGOSCOPE.

VOL. I.

ST. LOUIS, MO., JULY, 1896.

No. 1.

ORIGINAL COMMUNICATIONS.

ON THE PHOTO-FLUOROSCOPE.

BY J. MOUNT BLEYER, M.D., F.R.A.M.S., OF NEW YORK.

[Original Communication to the Royal Academy of Medicine and Surgery of Naples, Italy, For 1896.]

The idea of seeing by human device through many inches of solid matter is no longer a chimera—although still considered one only a few months ago—to men advanced in cathode ray analysis and experiments.

What is the advantage discerned by us in this latest discovery of science? To what limit does our expectation of its practical use in our science run? Our latest experiments with these unknown rays have enabled us to reach, and have actually revealed to our eyes, the human heart, lungs, skull, bones, larynx, accessory cavities of the face, and in fact most of the internal and hidden parts of the body. This is an extraordinary fact. To our ancestors it would have appeared a miracle, ascribable only to some supernatural agency, preferably that of the devil, for in the gloomy mood which they carefully cultivated the devil appeared to be a more potent agent in mundane affairs than Divinity itself. Even to us of the present who have carefully eliminated the supernatural, either in the form of God or devil, and who have been calloused to the marvels of the natural world by

the thick-coming sensations that day by day, and even hour by hour, crowd upon our senses, this is an event altogether out of the common. But we are still little more reasonable than our progenitors. After the first stunning effect of an announcement of this sort we rebound into an unreasonable state of expectancy. We are not content with the marvel of the moment. We anticipate the future. We would outstrip nature and plunge into the supernatural. We exaggerate, we augur the utmost. We are disappointed if our fondest anticipations are not immediately realized.

The most appropriate remarks are those uttered by Mr. Denshaw, one of the few remaining followers of Zoroaster, who identifies the unknown light as one manifestation of what has been known to eastern scientists as astral light, or the seventh dimension of matter.

"As we touch the borderland between the known and the unknown, we just begin to comprehend in the shadows which float around us how matter and spirit flow into each other, and we reach out with still more eager hands to fathom the great mystery of life and evolution.

"The analysis of the akasa or ether by the Vedas thousands of years before Christ, the transmission to the eastern Hindoo sages, receiving from them clearer illustrations and greater force as they came down through the ages, no longer shut up in the mountain monasteries, are springing into life and strength at the magic touch of Science."

"The Roentgen light, before which the invisible and the opaque become transparent, is the clairvoyance of science, standing perhaps in the same rank, in some way not now understood, but reaching the same results as the mental or spiritual clairvoyance, which has long been a mysterious but demonstrated fact. Another disciple of this school, Dr. Guernsey, applied such terms as the 'cathode rays of clairvoyance,' and the 'all-seeing light;' he said it was impossible at this early state of development to form more than the faintest conception of the revelation of hitherto closely guarded secrets of nature to which it opens the door.

"In studying the molecules of matter in the attenuated ether of the high vacuum bulb, which, propelled by the cathode pole, strike out with such fierce energy as to pass through flesh, metals, bone, wood, and in fact all opaque objects, to the photographic plate beyond, we seem to have within our grasp, and subject to our control, those physical particles which are supposed to constitute the physical basis of the universe. These little particles of radiant matter which exist everywhere through the atmosphere—so minute that a quadrillion of them roam with freedom in a bulb some four inches in diameter—are in some of their properties as material as the floor upon which we

stand, while in other properties they almost assume the character of radiant energy, moving with such rapidity as to permeate all bodies and all space, not simply penetrating unoccupied space between the atoms and molecules, but filling the entire domain of the physical from atom centre to atom centre and from space to space, as one indissoluble soul.

"Without the omnipresent atmosphere or ether of nature the phenomena would cease. Communication of energy from sun to planet, from constellation to constellation, could not be maintained unless it be conceded that motion, which is an inseparable factor of all energy, can travel through abyssmal voids without any medium of transmission.

"Every step in this discovery along these physical lines approaches nearer and nearer to the spiritual ideal and the demonstration of physical energy which bridges the chasm between mind and matter."

I make these quotations simply to show that this school of philosophy has also taken up the subject of X rays—from their point of view—which they claim demonstrated many of their beliefs of the unseen. This question, however, is to be disputed on many lines of thought by non-believers. It will be curious nevertheless to learn what the great psychologists and other logists will teach us when they finally reach conclusions.

Sufficient of the practical value of the application of the Roentgen rays to medicine and surgery is already known for us to pronounce them and the wonderful screen that reflects them as among the greatest triumphs won in the modern history of invention.

I am happy to say that after much experimenting in this field I have been enabled to produce the photo-fluoroscope.*

This invention enables the eye and the photographic sensitive plate to record simultaneously images as we are desirous of putting them on record.

The photography of luminous objects has been for some years an important factor in astronomical studies, as, for example, in the mapping of the stars, and the recording of solar and stellar spectra and the phenomena of eclipses, but of late it has been made to embrace a broader range of subjects. Several of the most reputable photographers and scientists have of late given this special branch much thought and study; and among them I cannot pass by without mentioning a most beautiful set of pictures made by Wallace A. Levi-son and by Nicola Tesla, whose illustrations of luminous objects have given me much pleasure and fruitful recompense. I owe to the study

*I am indebted to A. Hamerschlag and to Mr. F. J. Harrison (editor of *Anthony's Photographic Bulletin*) for most valuable suggestions during the progress of this investigation.

of them the invention of the instantaneous photo-fluoroscopic photography of luminous objects taken directly from the fluorescent screen.

The invention bears my name (Bleyer's Photo-fluoroscope), and is very simple. It is practically an adaptation of the fluoroscope to the needs of the physician and surgeon, and consists in the combining of direct and instantaneous photography of the shadow thrown on the fluorescent screen. In other words, it is simply a combination of an ordinary copying photographing camera and a fluoroscopic screen of special size, carefully fitted into the camera. Several other types of cameras can be adopted also for this purpose. The screen receives the object fully outlined in all its detail, while the camera is so arranged as to take time exposure of the object made visible on the screen. By this means the object can also be seen and studied and the trouble located before the photograph is taken. Then the proper focus is taken by means of the camera arrangements, and a direct photograph is obtained. The sensitive plate is then removed to the dark room and is there prepared like any other photograph.

The photo-fluoroscope has the advantage over other inventions of revealing the object on the screen, either to be seen directly by the eye or to be reproduced on a sensitive plate. This renders it of peculiar advantage to physicians and surgeons for positive diagnosis. The photograph is necessary only for recording purposes, as the object can be seen plainly by the naked eye, the phosphorescence making it possible to see the object plainly in darkness. Necessarily, this is more advantageous to physicians than the general method of shadow-graphing by the ordinary plate-holder, with the object placed thereon, without the assistance of the camera.

As far as we know at present in regard to the Roentgen rays, the laws applicable to light are entirely disobeyed, and consequently no lenses or camera can be taken into consideration. This light does not admit of being, so to say, refracted or reflected in the same manner as ordinary light, so that there is no possibility of direct use of the camera with the Roentgen rays. But the onward march has added the fluorescent screen, by means of which the eye can follow the rays through hitherto impenetrable substances, and with its assistance I have succeeded in establishing the method illustrated, which for the uses of physicians and surgeons is simpler and gives infinitely more satisfying results than any other method of which I know at present. The difficulty in accomplishing this can be appreciated only by those who have followed up the subject, and worked in the laboratory side by side with companions in the race for priority, and with full knowledge of the thousands of difficulties that beset the endeavors of the experimenter.

One of the most important advantages that the photo-fluoroscope presents over the Roentgen method of photography is, that curves, corners and angles are no obstacles to it, while an object in the Roentgen photography must always be in direct contact on a flat plate containing the sensitized plate; the reason being that the Roentgen rays must be applied directly on the surface of the object, while with the photo-fluoroscope it may be taken at a short distance. This is due to the fact that the laws of light applicable to photography have been applied by photographing the luminous shadow from the screen, and by the use of lenses.

A paper containing an abstract of my lecture, which will be found printed in the *New York Medical Journal*, April 25, 1896, contains an account with much detail on the invisible light of the spectrum, and therein I showed partly its relation to the present status of Roentgen shadowgraphy. Here I take up some of the physical phenomena noted in connection with direct photography by ordinary light rays, which obey the laws known to us. This will make the subject matter herein spoken of more intelligible to my readers.

It remains a demonstrated fact that a ray of light can be separated into its proximate or ultimate colors. These various portions of colored light have certain distinct properties, which have been most carefully investigated by different physicists. The illuminating power of of the spectrum, as might be imagined, exists in the most luminous portions of the band of colors, viz., in the yellow light; and experiments carefully conducted by Herschel and Fraunhofer confirm this fact, and show that the greatest amount of light exists nearer the red than the violet end of the spectrum. The colorific power of the spectrum increases gradually from the blue color; it rises to its maximum in the red; but what is the most curious, it reaches its greatest elevation beyond the limit of the visible red ray, or red end of the spectrum. The invisible rays of heat are, therefore, more powerful than the other heat, giving rays of the spectrum accompanied with light, as in the yellow, orange or red colors; the luminous radiations do not give as much heat as the non-luminous ones; and Tyndall, speaking of this remarkable circumstance, says: "In the region of dark rays beyond the red the curve shoots up in a steep and massive peak, a kind of Matterhorn of heat, which dwarfs by its magnitude the portion of the diagram representing the luminous radiation."

What is of most value to us just now is the consideration of the chemical influence of the spectrum. The chemical influence of the spectrum, unlike the heating and illuminating rays, is at its minimum at the red end, and rises gradually in intensity towards the violet. Light, as we

know, acts as a chemical agent only with certain portions of its luminous rays, but, like heat, with its non-luminous rays. Ritter, of Jena, discovered that chloride of silver was acted upon and blackened beyond the violet end of the spectrum. Dr. Hentschel and Dr. Wallaston confirmed these facts. These chemical or actinic rays have been carefully studied and most industriously employed, so that a new art has been created, which is now called photography, and to-day we have made it one of the most subservient of additions to the requirements of industries and sciences. This late addition of instantaneous photo-fluoroscopic photography is most invaluable to the medical and scientific world. Moser has solved for science a valuable truth, by showing that certain rays have the power to set up chemical change; and this once begun may be continued with other colored rays that could not in themselves produce chemical decomposition. He shows this experiment by taking an iodized plate, with an engraving placed over it, and exposed it to light until the action had commenced; if this plate was then placed under the violet glass the picture was soon obtained, while a very long time elapsed and the result was imperfect when the same plate after exposure to sunlight was placed under a red glass. If, however, the prepared plate was first exposed in a camera to a blue light and then placed under the red glass, the picture was speedily obtained. In my article on "New Rays of Roentgen, the new photography," etc., *New York Medical Journal*, 25th April, 1896, I gave some detailed accounts, which were found to be most appropriate at this stage of the study on shadowgraphy by means of the fluorescent screen, etc. In these remarks phosphorescence has been considered; and here it may be mentioned that Becquerel calls the rays capable of setting up or commencing chemical action "exciting rays," and others which only possess the power of continuing a chemical change "phosphoregenic" or "continuing rays," and has identified the latter with the power possessed by light of rendering certain bodies luminous. Of these I had also spoken in the same article. It is the phosphoregenic rays, extending from the indigo to beyond the violet ray, which render certain bodies phosphorescent by insulation. Becquerel has invented a most ingenious instrument, called the phosphoroscope, by which substances as the tungstate of calcium and all others which have the same property of giving off fluorescence, can thereby be viewed directly after exposure to light and the time of the duration of the phosphorescent power accurately determined. Thus several bodies which are only phosphorescent for some fraction of a second have thereby been added to the long list of substances affected in a similar but more decided manner.

Prof. Stokes has investigated with the greatest care the phenomena which he titles fluorescence, or internal dispersion; figures or letters painted with a strong solution of sulphate of quinine in tartaric acid became curiously self-luminous when the rays passed through blue or, better still, violet glass, are allowed to fall upon them.

A tube of uranium glass conveying the coil-discharge in vacuo is similarly affected by this electric light. It was ascertained that prisms made of glass appeared to absorb a larger number of the more refrangible rays; and Prof. Stokes found that by using prisms made of quartz he could obtain with the electric light a spectrum six or eight times as long as the ordinary one; and his experiments indicate that the chemical, the luminous, the phosphoregenic rays, as rays of high refrangibility, are intimately connected with each other, and are only so many effects of one and the same cause. These experiments were based on the facts that when bright rays from the electric lamp are passed through blue glass, and then permitted to fall upon a plate of glass colored yellow by the oxide of uranium, the latter becomes self-luminous and emits rays which are altered in their vibratory power; the original rays have undergone a change in refrangibility.

Only a few days have swept by, and hardly have we recovered from the surprise that the Roentgen discovery gave us, we are again startled with another discovery of a variety of light called by M. Le Bon "*La Lumière Noire*."

There can be no doubt about the fact that a new field has been opened for research since the recent labors of Hertz, Lenard and Roentgen have given us an idea of the discoveries that are still to be made in the study of light, and the extreme delicacy of the photographic plate. These facts prove each day to us how confined are the limits of our powers of sight. It appears to be absolutely demonstrated that the vibrations of light can manifest themselves at least in two separate ways, and that there is a visible and an invisible light, as is the case with heat.

The human eye is only adapted for impressions from visible light, whereas the photographic plate is affected by the obscure form of light. It may be that certain animals have the power of seeing this form of light, which may explain some of their habits that have hitherto seemed a mystery; but at the rate at which discoveries are now being made there is no necessity for speculating about the future. For the time being, one fact is much to be regretted—namely, that to understand each other we have to use the terms visible and invisible light, as though the words did not more or less destroy each other's sense; but until our vocabulary shall have undergone the necessary

modifications we shall be obliged to make use of the terms to which we are accustomed.

There is, therefore, a visible and an invisible form of light, and the characteristic of the latter is that it has the power of passing through opaque bodies. Invisible light may come from cathodic rays, or even from an ordinary luminous body. Professor Roentgen has revealed to us some of the properties of the variety that comes from the electric effluvium, and now M. Le Bon calls attention to the peculiarities of that originating in luminous bodies. His demonstrated experiments, as presented to the Academie des Sciences de Paris in a communication, are as follows: In an ordinary positive photographic frame is placed a sensitive plate, and over it an ordinary photographic negative, which is covered in turn by an iron sheet the size of the anterior face of the frame. The whole apparatus thus covered by a metallic sheet is exposed to the light of a petroleum lamp for about three hours. Energetic and prolonged development of the sensitive plate carried to complete blackness will then give a faint image of the negative, which can be clearly seen by transparency.

Without changing at all his preceding arrangement, M. Le Bon places behind the sensitive plate a thin sheet of lead and folds its edges over in such a way that they slightly cover the sides of the iron sheet. The sensitive plates in the negative are in this way imprisoned in a sort of metallic covering, of which the anterior part consists of iron, and the posterior and lateral parts of lead. After three hours exposure to petroleum light an excellent image is obtained, instead of a very faint one, as in the preceding case.

M. Le Bon thinks that the contact of the two different metals gives rise to a slight electric current, whose action is combined with that of the luminous radiations that have gone through the iron sheet. Solar light is said to give the same results as petroleum without being in any way more active—carbon, iron, copper and other metals are easily pierced by it. The most transparent metals for this black light are aluminum and copper, after which comes iron. Zinc, silver and tin, and particularly black paper, are much more resistant; but whereas the cathodic rays pass easily through black paper, black light cannot do so. M. Le Bon showed the academicians at their meeting a negative obtained through an aluminum plate, which was as clear as if it had been prepared in the ordinary way. These experiments have been successfully reproduced by several of his colleagues and proven to be of value to the photographic science and, perhaps, to ours. I have satisfied myself of his important work, and there is no telling what uses *La lumière noire* may be put to soon.

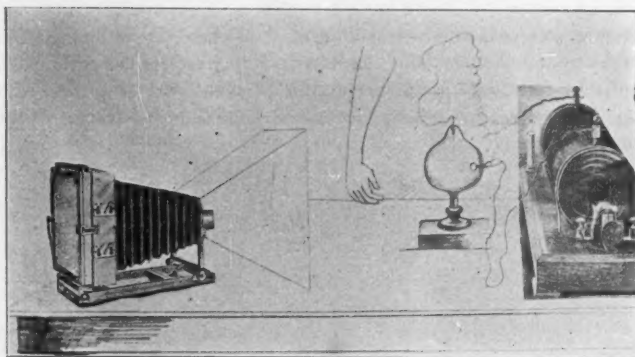


FIGURE 1. Dr. J. Mount Bleyer's Photo-Fluoroscope.

EXPLANATION OF THE MOUNT BLEYER PHOTO-FLUOROSCOPE.

To the left of this illustration is seen the camera fully equipped and its accessories mounted on a table, and its fluoroscope attached, showing on its screen a hand ready to be photographed by this process directly from its luminosity. The screen is arranged so that any size object can be taken in. The fluoroscopic box is very light, made of cardboard and fitted close on to the camera, and encircling the lens with zinc, thus preventing stray Roentgen X rays from reaching the sensitive plate through the wood portion of the camera. On the right side is a Crookes' tube attached to a Ruhmkorf coil, which is operated either by a spring vibrator, or preferably by a break wheel. The entire picture shows the full operation of photo-fluorographing. The latest model has many other detail attachments; this one is the first experimental model. This apparatus is now made by Hamerschlag & Co.

THE PRACTICAL POINTS IN PHOTOGRAPHING BY MEANS OF THE PHOTO-FLUOROSCOPE.

Above all things in photo-fluorography a dark room is required for good results. Here the object to be photographed should first be located with the fluoroscope, in order to fix its exact position. This done, the screen on the photo-fluoroscope must light up the object until every detail shows clearly. Now shut off the X rays before introducing the sensitized plate into the camera, to avoid any possibility of fogging the plate.

After these preliminary steps have been attended to, the X rays are turned on, and an exposure ranging from one to two minutes is allowed, and that depends upon the density of the object. Good strong X rays are required, and it will be found that a coil giving a spark of from six to eight inches will answer all purposes for ordinary work. In

fact, all accessories should be in first-class working order. Much experience is also necessary, and the best teacher, for obtaining good results by this method as by the Roentgen. A focus tube is the best.

The plates should not be removed until the X rays have been shut off. Upon these few and simple injunctions depend the success of the photo-fluoroscope.



FIGURE 2. Photo-fluoroscopic picture of a larynx with an intubation tube in position, illustrating a foreign body in the larynx.

I succeeded as early as April 7th in locating a tube in the larynx, and another that had slipped down into the trachea, and recorded them, as shown in the accompanying picture, in the early trials and undeveloped stages of my photo-fluoroscope, and before the Crookes' tubes were brought up to standard make. I, nevertheless, present them herein, knowing that they will create curiosity and induce others to follow my footsteps in the use of the X rays in laryngology.

In my lecture, April 15th, 1896, before the Medico-Legal Society, I referred to this fact, notes of which were also published at the time. I refer to these dates now in confirmation of the priority of the objects located and photographed by me over those recently obtained by Dr. Levy, of Berlin, and others in England, and mistakenly accorded the priority in several of our dailies.



FIGURE 3. Illustration of a lost intubation tube found in the trachea.
Removed April 2, 1896.

At present much of my time and work with the photo-fluoroscope is being spent in shadowing out tumors, growths, foreign bodies, and various diseased conditions of the larynx and bones of the face and their accessory cavities, and the lungs with their many complicated ailments. In these experiments I have so far been very successful in obtaining first-class definitions of the varying shadows, illustrating many interesting clinical conditions of these organs. Many fine specimens which I made are in my possession, which the above testifies to.

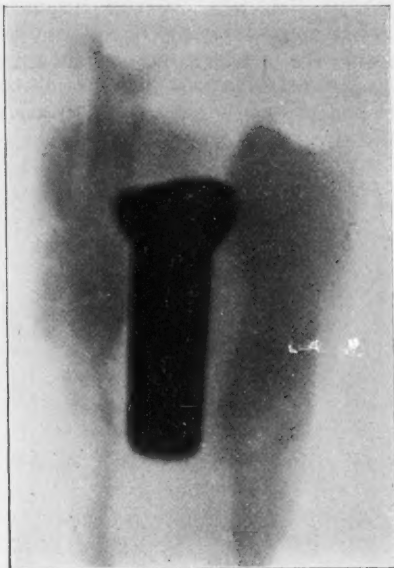


FIGURE 4. Showing intubation tube which shifted out of position into the subglottic region; extracted under headlight by a long forceps. The case was one of laryngeal diphtheria, and the shifting occurred after the inflammatory process became absorbed. Larynx found to be abnormally large.

The results of my further experiments will be taken up, with their technical points, in a paper following this.
460 Lexington Ave.

HAY FEVER AND ITS SUCCESSFUL TREATMENT.

BY SETH SCOTT BISHOP, M.D., LL.D., OF CHICAGO.

Attending Surgeon to the Illinois Charitable Eye and Ear Infirmary; Professor of Otology in the Post Graduate Medical School and Hospital; Professor of Diseases of the Nose, Throat and Ear in the Illinois Medical College.

The history and symptoms of hay fever are so familiar, that for the sake of brevity, that rare literary jewel, we will omit their consideration. The nature of the disease and its treatment are of all-absorbing interest.

Upon the pathology of hay fever there is pretty general unanimity of opinion among American specialists. In an extensive personal correspondence with a large number of these able gentlemen, I have taken pains to ascertain their views, and with few exceptions they adhere to the theory of its essential neurotic character. This is not antagonistic to the uric acid theory proposed by the writer at the meeting of the American Medical Association in 1893, as follows: An excess of uric acid in the blood causes hay fever, or nervous catarrh. Attacks can be stopped by precipitating the excess of uric acid from the blood by rendering the latter less alkaline with an acid treatment. Attacks can be prevented by reducing the amount of uric acid in the body to the normal, and maintaining it there. Uric acid exists in the blood in the proportion of about one to thirty-three of urea in health. When this proportion is disturbed by a relative increase of the uric acid, certain disturbances of a vascular and neurotic character arise. Among the manifestations of uric acidemia are: headache; pains in the limbs; insomnia; lassitude; depression of spirits; irritability of temper; the pains of neuralgia, rheumatism and gout; intense pruritus; eczematous eruption, the dermal analogue of coryza; numbness of the skin; creeping sensations; hyperesthesia and pain in the skin; asthma; epilepsy; coma; etc. Many of these symptoms of uric acid irritation are closely allied to paroxysms of hay fever, or, more properly, nervous catarrh. Sick headache and asthma sometimes alternate with these attacks, or take the place of them.

While suffering from migraine, Haig found the uric acid increased to the proportion of one in twenty or twenty-five of urea, whereas be-

fore and after attacks he found it as one to forty; and the headache was proportioned to the excess of uric acid over the urea, and not to the amount of alkali used to bring the uric acid out. The mental condition varied directly with the relative amount of uric acid in the urine. The excretion of the acid was greatly diminished before the attacks, *i. e.*, during mental exaltation. He claims that the effect of uric acid is to contract the arterioles and capillaries all over the body, producing the cold surface and extremities, raising tension of pulse, and, according to Marcy's law, that pulse rate varies inversely as the arterial tension, slowing the heart. Headache is attributed to a local vascular effect of the uric acid. During the warm months, or when the hay fever season is the worst, there is an excessive excretion of the acid, while in cold weather there is a minus excretion. During plus excretion there will be high arterial tension with anemia of the brain, bad temper, and other symptoms of irritation. Haig maintains that at this time a dose of acid would free the brain circulation from the power of the uric acid, and produce, as Roy and Sherrington have shown, an increase in its size and a free flow of blood in its vessels. Following these deductions Haig relieved his attacks of migraine, from which he was a great sufferer. He found during an attack of influenza that there was a rise in the acidity of the blood, urine and tissue fluids, thus driving the uric acid out of these fluids, diminishing its excretion and causing its retention in the body. Bertillon says that suicides increased forty per centum in France after the influenza epidemic. This may be accounted for by the accumulation of uric acid in the body during the diminished alkalinity of the blood, and when the blood regained its normal alkalinity the stored acid was taken into the circulation and produced its characteristic irritability and depressing effects.

In health about five to eight grains of uric acid are secreted every twenty-four hours, and it is readily soluble in the blood, which is slightly alkaline. If there is increased formation of this acid no harm results so long as it is promptly eliminated and the ratio between it and the urea is not disturbed. Haig found that by diminishing the alkalinity of the blood he freed it from uric acid, relaxed the arterioles, relieved headache and mental depression. Increasing the alkalinity increased the acid excretion, contracted the arterioles, slowed the circulation of the blood, and caused languor, depression, headache, and in epileptics a fit. Epilepsy, migraine, spasmodic asthma, etc., are like neurotic catarrh—functional nervous diseases. What Haig says about epilepsy and migraine may be affirmed of asthma and hay fever: "They may come on early in life, last for years or

the whole of life, tend to recur at more or less regular intervals; are met with in members of the same family, may afflict one and the same patient—now a fit, now a headache, alternating or together. Epilepsy and headache, gout and rheumatism, are very commonly met with in the same family." Cerebral anemia appears to obtain in hay fever, and the attacks are relieved by such remedies as relieve anemia of the brain: amyl nitrite, coffee, and other cerebral stimulants.

While pursuing the study of gout and allied diseases dependent upon lithemia, I was struck with the close analogy between the conditions present with their local manifestations and the various phenomena of hay fever. The theory that the paroxysms of hay fever are due to a uric acid toxemia is not antagonistic to the present status of medical opinion or surgical treatment, but, on the contrary, explains questions that were inexplicable before. As a tumor or hypertrophied bone may give rise to convulsive seizures in epilepsy, and as its removal may be followed by relief, when no other structural cause exists, so in hay fever where new growths and other lesions of the nasal mucous membrane are present, the attack may be started by the accumulation and the suddenly setting free of uric acid. This precipitates the paroxysm by its irritant action, which finds expression in the group of symptoms characteristic of hay fever or asthma instead of some one of the other allied diseases. The particular form of manifestation may be determined by the growth, or seat of irritation, located in the nasal cavities. Where this is the only determining factor of the nature of the morbid symptoms, no other organic disease having resulted from the long-standing trouble, the removal of such a peripheral source of irritation may give relief from these symptoms, but it may not prevent the uric acidemia from switching off into other kindred lines of disturbances, if it be not corrected.

However, the primary determining cause of the particular manifestations in this disease is an inherent, perhaps hereditary, susceptibility of the nervous system. In this way only can we account for the fact that the same subjective or objective exciting cause (uric acid, pollen) will produce one train of distressing symptoms (nervous coryza) in one individual, and an entirely different one in another (asthma or migraine).

This uric acid hypothesis explains why some persons suffer from attacks under certain conditions in winter as well as during the warm months. It also unifies all the various forms of hay fever. They are all variations of a nervous catarrh. The periodicity of hay fever has a counterpart in migraine, which comes once in every seven, ten, fourteen or thirty days, for years or for life. But enough has been said to lay the base line of a treatment that has proven vastly more successful than any other thus far devised.

The treatment must take into consideration the three-fold nature of the disease: 1st, the abnormally susceptible nerve centers; 2d, the hyperesthesia of the peripheral termini of the sensory nerves; and 3d, the various local irritating agents. Among the third causes I class uric acid. A prominent feature of these seizures is that they often come on suddenly in the morning when first awakening from sleep, although the previous afternoon and evening may have been free from suffering and the night one of restful repose, with no direct access of dust-laden atmosphere from without and no change in the contents of the sleeping apartments.

The following facts appear to explain this: the blood is the most strongly alkaline between the small hours of the morning and 9 A. M., when it reaches its greatest alkalinity. The more alkaline the blood the more freely soluble is the uric acid. Therefore, in the morning hours the blood is the most heavily charged with this irritant, and during these hours patients suffer the most from angina pectoris, migraine, asthma, hay-fever, and other functional nervous disorders.

The blood is the most acid during the hours of bodily activity, and it reaches its maximum of activity about midnight. During this time there is only a small secretion of uric acid, and the amount circulating in the blood is minute. As the blood begins to increase in alkalinity in the morning it dissolves the uric acid out of the more alkaline tissues in which it has been stored—the liver, spleen, cartilages, joints and fibrous tissues—and with the increasing alkalinity and solvent properties of the blood it becomes rich in uric acid, until it produces the drowsiness, heaviness, or other nervous phenomena peculiar to any given case.

The palliative treatment for the uric acidemia consists in promptly freeing the blood of it by the use of an acid. I have used dilute sulphuric acid in doses of twenty or thirty drops in an abundance of water, but on account of the griping pains and its relaxing effect on the bowels it was necessary to abandon its use. I found the Horsford acid phosphate an excellent substitute. I used teaspoonful doses of this without any ill effects, and with the result of giving complete immunity from suffering. One or two teaspoonfuls in a glass of water at bedtime and on first awakening in the morning were sufficient to break up the habit entirely. Bence Jones claims that citric acid clears blood of uric acid. I have made it a point to have the morning dose well diluted with water, for the purpose of starting the perspiration; for I have observed that as soon as a patient has sneezed violently enough to induce free sweating, the symptoms decreased or disappeared. The perspiration eliminates uric acid, and helps to clear the blood.

A copious draught of hot, strong coffee, taken on first awakening in the morning, prevents attacks in some cases at least. It quickens the circulation, starts the perspiration, increases the urine, stimulates the nervous centers, fortifies the power of resistance, and produces a sense of exhilaration and well-being. I have known this simple remedy to break up a series of morning attacks and to maintain freedom from them. If the over-wrought nerves are saved this morning seizure, they are far less likely to succumb to casual irritants during the day.

In very obstinate cases it may be necessary to resort to more potent remedies. There is one that has proved in my hands uniformly successful in giving relief, especially when given at the onset of the attack of hay-fever or coryza. Like the acid, it is for temporary use only. I have employed it for the past fifteen years or more, and published it repeatedly; but in this case it is, like old wine, the better for age. I refer to a combination of morphia and atropia, in the proportion of one part of atropia to fifty of morphia. The usual adult dose is from $\frac{1}{16}$ to $\frac{1}{8}$ grain of the mixture, according to the severity of the attack. It may be repeated in an hour or two if the first dose does not entirely relieve sneezing, hydrorrhea and stenosis. I have never known it to fail in stopping an attack when properly adapted to the case. No person has ever acquired the drug habit through my prescribing it. I never write a prescription for it, nor allow a patient to know the composition of the remedy—not for mercenary purposes, but in order to obviate the possibility of being responsible for the drug habit. The morphia clears the blood of uric acid, diminishes the nervous irritability, suppresses hypersecretion from the muciparous glands, and stimulates the circulation and activity of the nervous centers; while the atropia elevates the tone of the blood vessels, quickens the pulse, decreases all the secretions except the urine, sustains bodily temperature, stimulates the respiratory center, counteracts the constipating effect of the morphia, and acts as an antispasmodic.



FIGURE 1. Camenthol Inhaler.

The camenthol inhaler (Fig. 1) has afforded hay-fever sufferers more relief than any other pocket inhaler with which I am familiar. It is more effective than menthol alone, and does not become irritating, as menthol crystals do after considerable use.

All patients seem to derive much benefit from the home treatment with a mild spray of camphor-menthol in lavoline. It is best to begin with a one-per centum solution, and gradually increase to the three-percentum. This preparation cleanses, covers and protects the mucous membrane. It contracts the capillary blood vessels, reduces swelling, arrests sneezing and irritation, checks excessive discharges, and corrects perverted secretions. Much comfort is afforded by the employment of this spray, at bedtime especially. Even the ten-per-centum solution can be used without ill effects by projecting the finest kind of a nebula by means of the hand dilator. I have seen a moment's treatment of this kind instantly stop violent sneezing and a profuse watery discharge.

The curative treatment should begin before the season of attacks. I am of the opinion that an excess of uric acid in the system is not due alone to continued retention and storage of the small normal overflow by the renal vein, but to an increased formation also. It follows then that it is necessary to reduce as much as possible the use of those foods that increase the actual formation of uric acid, such as meats, sweets, wines, beer, etc., and limit the diet largely to fruits, vegetables, milk, fats, etc. A diet of milk, with occasional very small quantities of egg and fish, with no other animal food, will prevent suffering from sick headache entirely, without medicinal treatment. With this diet the natural ratio between uric acid and urea — 1 to 33 — is maintained. Haig claims that by a uric-acid-producing diet one can store up in the body several ounces of uric acid in a few years, or by a correct diet not as many grains. He has been on such a diet over eight years, with almost never a headache. By eating meat and drinking wine two or three days in any single week he is sure to bring on the migraine.

It is a veritable hardship for some patients to be altogether deprived of meat, especially beef. They hunger for it like a toper for his grog. These people can be allowed nuts instead, for they take the place of beef to a large extent. The difficulty experienced in this substitute is that nuts are digested with difficulty unless very finely masticated. Even then they may cause gastric distress and flatulence. I have found an excellent preparation of nuts in bromose, which contains about the following percentages of these ingredients: maltose (digested starch), 21; nut fat (perfectly emulsified), 24; vegetable albumin, 19; dextrin and soluble starch, 17; salts, 2; water, 15. This furnishes the nutritive qualities of beef, and the nut oil provides the equivalent of butter. It is predigested and sterilized, and is practically bread, butter and meat combined.

Exercise aids in the excretion of uric acid, although there may be an actual increase in the amount of acid. A proportionately larger amount is eliminated.

A course of salicylate, salicin, lithium, etc., will remove the excess of uric acid. If an alkali is given it is likely to produce uricacidemia and precipitate an attack of the trouble we are endeavoring to prevent. For an attack, then, a dose of acid should be given to free the blood of uric acid; then the salicylate of sodium should be given for two or three days or longer to sweep it out of the body; but the salicylate should not be given during the attack, for it may aggravate the symptoms. For a month or two preceding the regular season of attacks, from two to six grains of the salicylate should be given every day or two, in order to get and keep the amount of acid in the body down to the normal amount. Instead of the salicylate, from six to twelve grains of lithium may be taken in very copious draughts of water two or three times a day. The carbonate powder is disagreeable, but the effervescent tablets of citrate of lithia are quite palatable when dissolved in an abundance of water. Each tablet contains three grains. After giving a fair trial of the various preparations, I have found Warner's tablets the most satisfactory. These are far superior to the so-called lithia waters. The claims made for some of these waters are somewhat amusing, since in order to get an ordinary dose of lithia one would have to drink 6,000 gallons. A long use of the lithia tablets seems to produce no ill effect; and this is fortunate for those who cannot take the sodium salicylate on account of its deleterious influence upon the ears.

This treatment, combined with proper diet, should be successful, provided that there is no organic disease of the structures, central or peripheral. Any organic disease—hypertrophy, polypus, etc.—must receive the necessary surgical treatment. A vitiated condition of the blood or a depressed condition of the nervous system must be corrected. Excesses of every nature must be avoided. All the organs of the system should receive such attention as to secure the harmonious co-ordination of their functions; for this treatment is directed against uricacidemia only as a cause of suffering, but it should not be forgotten that there are other causes that may operate to produce attacks, just as in the case of spasmodic asthma arising from bronchitis, irritating gases, and other excitants.

For the sake of convenience and accuracy of dosage I have had small tablets made, each containing morphia, $\frac{1}{12}$ grain; atropia, $\frac{1}{100}$ grain; and caffeine, $\frac{1}{4}$ grain. They are known under the name of coryza tablets, for they are as efficacious in the early stage of acute rhinitis as in hay-fever.

When the pharynx, larynx and bronchi are involved I find the following tablets afford relief. They, as well as the others, are made for me by Truax, Greene & Co. Each throat tablet contains:

R Ammonii chloridi gr. ii.
 Tincturæ opii camphoratæ,
 Syrupi scillæ compositi,
 Syrupi toluani ʒss ℥ v.
 Extracti glycyrrhizæ q. s.

M.

One or two of these cough tablets may be allowed to dissolve slowly in the mouth every hour until the irritation subsides.

I have not referred to hay-fever resorts, for the treatment outlined dispenses with the necessity for them.

Columbia Memorial Building.

LINGUAL TONSILS.

BY EDWIN R. LEWIS, ⁵A.M., M.D., INDIANAPOLIS, IND.

It is not many years since the term tonsil was limited in its application to the two bodies which occupy the recess formed — one on each side of the fauces — between the anterior and posterior palatine arches. No other tonsils were known. The term was not indefinite; and yet Quain, in describing the tonsils, uses these words: "Like those already described as occurring at the back of the upper surface of the tongue." In other words, we find the lingual tonsils recognized as a fact, indefinitely to be sure, but in a way to prepare for its recognition ultimately.

Aggregations of lymphoid tissue and lymphoid follicles similar to the old well-known tonsils came to be recognized as foci of disease along the lateral folds of the pharynx, behind the posterior pillars of the fauces, on the back part of the soft palate and uvula, around the mouth of the Eustachian tube, and in the vault of the pharynx. With the recognition of such facts the term tonsil became general in its meaning, until it included many aggregations of tissue in different parts of the fauces, each of which was specifically named according to its locality. In this way the old, familiar tonsils are now known as the faucial tonsils, and other tonsils are distinguished as palatal, tubal, pharyngeal and lingual. Nor is this a mere technicality. The different tonsils are facts to be recognized in health and in disease.

It is no exaggeration to say of the lingual tonsil that it rivals, if it does not equal, the faucial in the variety of appearances which it presents upon examination. As a consequence, it is not at all surprising that it is the source of many annoyances and discomforts. Symptoms which were ever considered to be of obscure and unknown origin are now referred to the lingual tonsil.

Prominent among these symptoms are coughs of various characters, varying from a slight but constant effort to clear the throat to a serious and distressing paroxysmal cough, accompanied at times with a hemorrhage which is very alarming to patient and friends.

There are also many patients who complain of a "fullness" or "tightness" of the throat, which varies from a slight annoyance to a

sensation which seems to threaten strangulation or suffocation, and is suggestive of hysteria. The origin frequently is found to be mainly in the lingual tonsil. There is another class of patients, chiefly singers or speakers, who complain of a dry or rough or "scratchy" feeling in the throat, in whom also the lingual tonsil calls for treatment. The fact is (and it is one that ought to be recognized) that the derangements of the lingual tonsil are not exceptional, but very common. The symptoms which call for an examination of the lingual tonsil are of every-day occurrence—cough, "fullness" or "tightness" of the throat, dryness of the throat, and a rough or scratchy feeling. These symptoms may all be present, or a few of them only; when all are present the location of the cause is comparatively easy; when only one or two exist the cause may remain unrecognized for a while. It is important, therefore, that the lingual tonsil be examined very carefully in such cases. In fact, the routine examination of the lingual tonsil, if the "routine" be intelligently adopted, gives useful information in all cases; for negative information is frequently and positive information always helpful in the diagnosis of any case. The examination is easily made, and every general practitioner ought to be acquainted with its simple technique.

With the tongue properly protruded, and its tip gently but firmly held by physician or patient, the hand mirror (of a large size) can be so introduced as to bring into full view the image of the base of the tongue and of the entire space between it and the epiglottis. It is not an exaggeration to say that the revelation made of the condition of the lymphoid tissue in that space will more than surprise one not accustomed to make such examinations. The lymphoid tissue and follicles may be found swollen and hypertrophic on one or on both sides, just as one faucial tonsil only may be hypertrophied, or both. The surface of the hypertrophied tissue may be smooth and shining, or it may resemble a cauliflower in its nodulated appearance. The masses may appear pale or congested. It is not at all uncommon to see enlarged and tortuous veins coursing over the surface and between the nodules, from which blood escapes at times in quantity sufficient to occasion serious alarm to one not cognizant of its origin. The top of the epiglottis is sometimes seen to be caught among the nodular masses, and an explanation thereby given of the cause of a very irritating cough.

Nor is it unusual to find this satisfactory explanation in cases where the cough was so constant and violent as to be suggestive of serious pulmonary or laryngeal disease.

Enlarged and tortuous veins coursing among the nodules reveal the

origin, too, of hemorrhages which had seemed to confirm the serious diagnosis.

It is equally common to find the lymphoid tissue very much hypertrophied deep down in the space between the base of the tongue and epiglottis, and accounting for the full feeling complained of in the throat. It has been my experience to find such a condition complicating several cases of goitre, where the goitre was but slight, and yet seemed to be the cause of distressing tightness in the throat. The distress was all relieved by a proper treatment of the lingual tonsil. This happy result cannot be expected in all cases, but it warrants a careful examination of the lingual tonsil when the goitre seems to be the cause of the trouble and yet is not sufficiently large to account for all the trouble.

In nervous and hysterical patients the distressing feeling of fullness in the throat, which simulates globus hystericus, may be caused by hypertrophied lingual tonsils.

A great deal could be easily written about these various symptoms which arise in connection with the lingual tonsil, and that, too, without exaggerating the case at all, but it ought not to be demanded. Enough is known, and has been here referred to, to make routine examination of the lingual tonsil called for as a part of the necessary examination in all cases of the kind referred to.

It is evident from this brief and hasty statement respecting the lingual tonsil, and the various appearances which it presents upon examination that the treatment is determined individually. There is no routine method to be adopted for all cases. In many cases the examination reveals one or more distinct enlargements that make the decision an easy one, whether snare or cautery be used. In other cases, where the hypertrophy is more diffused, the decision is not so easily made. The resort to a tonsillotome is not at all so warranted as in the case of enlarged faucial tonsils. It is well recognized that hemorrhage is not to be so much expected and dreaded from the amputation of faucial tonsils in children as in adults.

But enlarged lingual tonsils are not found in children, unless exceptionally. Nor are such enlargements common in young persons. They are generally met with in the middle-aged, and they generally complicate constipation or deranged menstruation or a rheumatic diathesis. This fact makes the subject of constitutional treatment an important one in dealing with diseased lingual tonsils. It also makes the subject of surgical interference an important one, from the fact that there is more danger from hemorrhage than in the case of operating upon faucial tonsils in the young. So far as methods of removal are con-

cerned then, each case must be determined upon by itself and according to its individual conditions. A few careful examinations, supplemented by suitable local applications and constitutional treatment, will, as a rule, lead one to a determination as to the best operative methods to be adopted in each case.

There is a local treatment, however, that is beneficial in all, markedly so in many cases. I refer to iodine. My attention was first called to the benefits of this remedy by Seiler, who recommends it in his treatment of what he called "hypertrophic catarrh" (a name that is not to be commended from any standpoint). I had found it of help in the nasal passages, and from that came to use it in the post-nasal space. From the benefits derived in its application to the lymphoid aggregations there I finally came to use it on the lingual tonsil. It is a remedy to be highly esteemed. I make use of various solutions of iodine in glycerine (by means of potassium iodide), 10 grains to the ounce, 15, 20, 30, and sometimes use the tincture. It is important to guard against permitting any of the solution to run down or drop into the larynx, for it produces a distressing spasm of the glottis. The applicator devised by Elsberg is very good for use in making the application. A piece of absorbent cotton, firmly held in such an application and saturated with the solution desired, is thoroughly applied to the base of the tongue and the whole space between it and the epiglottis (the tongue being protruded and the tip held), the application being made daily, or less frequently, as may seem best in the individual cases. Rarely does the tonsil fail to respond favorably to this treatment; and this, with suitable constitutional treatment, is all that is called for in many cases. Where such completely favorable results are not obtained, and an operation must finally be resorted to, the iodine nevertheless prepares the way, by removing much of the congestion and reducing some of the enlargement, so that the part to be operated upon is more distinctly marked out, and better results can be hoped for.

131 North Meridian Street.

THE CLINICAL INVESTIGATION OF EAR DISEASES.*

BY J. DUNDAS GRANT. M.D., F.R.C.S., LONDON.

Senior Surgeon Central London Throat and Ear Hospital.

The existence of ear disease is suggested by the patient complaining of one or more of the CARDINAL SYMPTOMS:

- (a) Defect of hearing.
- (b) Pain in or around the ear.
- (c) Discharge from the ear.
- (d) Tinnitus (singing, beating, rushing); and
- (e) Vertigo; or
- (f) Visible alterations in the external parts.

As will be seen later on, *most of these symptoms may arise from extra-aural causes*; thus defect of hearing may be due to cerebral lesions; pain in the ear is frequently reflected from diseased teeth, tongue or throat; tinnitus aurium may be due to increased arterial tension, anemia, toxic or other general causes, and vertigo may originate from gastric, renal, and other disturbances. On the other hand, *constitutional disturbance of even the most profound kind may arise from unobserved ear disease*, notably some obscure cases of septicemia, in which, as Sir Dyce Duckworth has pointed out, it would be as criminal to omit to examine the ear as it would be to fail to search for a hernia in a case of obstruction of the bowels.

Before examining more fully it will be found advisable to enquire as to the *mode of onset*—sudden, acute, with or without pain, insidious or gradual; and as to the *duration* of the symptoms and their order of occurrence. The *supposed cause*—e. g.: injury, bathing, cold, throat affection, exanthemata, syphilis, gout, rheumatism, quinism, salicylism, exposure to noises, etc.—should be directly and indirectly investigated, due allowance being made for intentional and unintentional error on the patient's part. It may be here noted that insidiousness of onset and indefiniteness of cause (with early occurrence of tinnitus) are very characteristic of the sclerotic form of middle-ear catarrh.

*Author's revision from *Medical Annual*, London.

(a) IMPAIRMENT OF HEARING POWER

may arise from disease or obstruction in the external meatus, in the tympanic membrane or middle ear (including the Eustachian tube), in the labyrinth, in the auditory nerve or nuclei, or in the auditory cortical centre and strands leading to it. When the disease is in the external or middle ear the impairment of function is termed "obstructive deafness," and when in the labyrinthine or intracranial distribution of the auditory nerve, "nerve deafness." The hearing is usually tested by means of the *voice*, the *watch*, the *tuning-fork*, and *Galton's whistle*. Professor Politzer uses as a source of sound of constant intensity an instrument termed the *acoumeter*.

The *hearing for the voice* is best indicated by the distance at which the patient can hear *whispered words*, and in cases of extreme deafness, *ordinary, loud or shouting* conversation. This practical test should never be omitted. It will be found, as a rule, that in cases of obstructive deafness the hearing for the watch is relatively less affected than hearing for the voice, whereas patients with nerve deafness may hear the voice fairly well when the watch-tick is almost entirely unperceived.

The *watch-tick* is a useful means of measuring the progress of the case. The distance at which the watch in use can be heard by a normal person should be ascertained, and this distance in inches, say 60, be written down as the denominator of a fraction, the numerator place of which is filled by the distance at which the patient hears it.

Thus, the patient hears such a watch at 5 inches with	}	5-2
the right and 2 with the left.....		60
The patient hears it only when in contact with the	}	c-co
right, not at all with the left.....		60

The test must be made by placing the watch beyond the hearing distance and bringing it nearer till the patient hears it.

As thus used the watch is a test of the perception of sounds conveyed by the air and by the tympanic apparatus—"air-conduction." It may, however, be used as a very delicate test for the perception of sounds conveyed through the bones of the head directly to the nerve—"bone-conduction," being placed in contact with the temple.

The *tuning-fork* is held vibrating opposite the meatus for "air-conduction," and on the mastoid for "bone-conduction." A very practical form of instrument is the tuning-fork (see cut), tuned to the middle C, as corresponding fairly to the pitch of the human voice in speaking. It has a button at the extremity of the shank which makes it comfortable to the head, and a roughened expansion midway in the

shaft by which it can be conveniently held. To test "air-conduction" it is set vibrating by a stroke on a soft body—the observer's knee—and is then held opposite the patient's meatus, who is to "say when

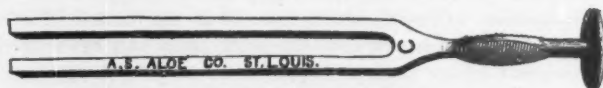


FIGURE 1.—Tuning-Fork.

it stops." At this moment the observer holds it opposite his own meatus and notes how many seconds longer he hears it. This is written down as a negative quantity. To test the "bone-conduction" the observer places the button of the vibrating fork on the patient's mastoid till it "stops," when he applies it to his own mastoid. If he hears it longer he notes the number of seconds as a negative quantity indicating the amount of loss of bone-conduction—degree of nerve deafness. On the other hand, if the observer does not hear it longer than the patient, bone-conduction may be normal (+) or increased (+), the latter occurring usually in obstructive deafness. He, therefore, sets the vibrating fork on his own mastoid, and when he ceases to hear it applies it to the mastoid of the patient and counts how many seconds, if any, the patient hears it longer than he did himself. These observations may be conveniently noted in a formula thus:

The patient hears the tuning-fork at the meatus	}	T-F.	$\frac{\text{meatus}-10}{\text{mastoid}+10}$
10 seconds less than the observer; on the mastoid 10 seconds longer than the observer			

If the patient does not hear it at all, either at the meatus or on the mastoid.....	}	T-F.	$\frac{\text{meatus}-x}{\text{mastoid}-x}$

Relation of Air to Bone-Conduction—Rinné's Experiment.—If the conducting apparatus is normal in any individual, a tuning-fork placed on the mastoid and allowed to die away till no longer heard, is again heard if held opposite the meatus. If the conducting apparatus is affected to any considerable extent, the tuning-fork when allowed to die away on the mastoid is no longer heard when held opposite the meatus. In the former case Rinné's test is said to be positive (Rinné+), indicating, as a rule, absence of any great degree of middle ear disease; in the latter negative (Rinné—), indicating disease of the conducting apparatus. It is to be noted:

(1) That it is only with a *low pitched fork*—middle C, or preferably one still lower—that a "positive" result excludes disease of the conducting apparatus.

(2) That in *old persons* bone-conduction is shortened more than air-

condition, and, therefore, a "positive Rinné" is quite compatible with the presence of tympanic disease.

(3) That in cases of increased "fatigability" of the auditory nerve centres, bone-conduction may appear less than it really is, so when this is suspected the fork should be replaced on the mastoid after being removed for an instant, and if reheard, again and again till no longer reheard, before being held opposite the meatus.

(4) That in unilateral obstructive deafness Rinné may appear "negative" in the normal ear from the vibrations being conveyed through the bones to the obstructed ear in which bone-conduction is increased. Similarly, in unilateral obstructive deafness Rinné may appear negative in the normal ear from the vibrations being conveyed through the bones to the obstructed ear in which bone-conduction is increased.

Graduated Rinne's Test.—It is often advisable to apply Rinné's test by means of a series of tuning forks, one an octave below the middle C, one the middle C, and three others, one, two, and three octaves higher, (C²56, C¹512, C²1024, C³2048, C⁴4096, double vibrations per second). In the slighter cases of disease of the conducting organs, the test is negative for the lower forks only, but in the more advanced ones for the highest as well, calling for a more unfavorable prognosis, especially if the test has given this result after inflation of the tympanum, by one of the methods to be subsequently described. If Rinné be positive throughout, the conducting apparatus is relatively healthy, and any considerable degree of deafness must be due to other causes, presumably nervous.

Weber's Test.—If a vibrating tuning-fork placed on the vertex is heard better in the worse ear, the affection of that ear is not of the nerve but of the conducting apparatus, and Weber's test is said to be positive. If it is better heard in the better ear, Weber's test is negative.

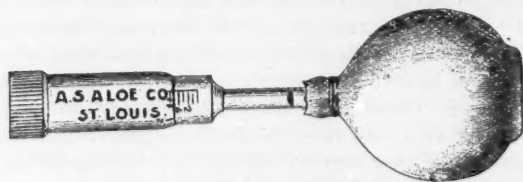


FIGURE 2.—Galton's Whistle.

Galton's Whistle is a minute metal instrument, giving a very high-pitched note, which can be raised or lowered by means of a screw piston. The degree to which the piston is screwed in can be read off

by means of the graduated marks on the instrument, indicating in millimètres and tenths of millimètres the length of sounding tube. By its means the highest note which is heard by the patient (upward limit of audition) can be registered. In using it, it is well to hold it about six inches from the patient's ear, and to press the ball very softly, especially for the highest notes, desiring the patient to say when he ceases or commences to hear a whistle or chirp, and not the mere noise of the rushing of air. For example:—

Galton R. 4·3 L. 3·9

With advancing years the capacity for hearing high-pitched sounds diminishes and the highest limit of audition descends, requiring a greater length of tube in Galton's Whistle. The loss of audition for the highest tones is characteristic of nerve-deafness, due to disease of the cochlea, and in all suspected cases Galton's Whistle should be employed.

Hearing power for middle and low tones may be tested by means of the tuning-forks above mentioned with the advisable addition of one of 64 d. v. and one of 32 d. v. In general, loss or diminution of hearing for the low tones is characteristic of obstructive deafness, and for the middle tones, functional deafness or disease of the intracranial portion of the auditory nerve or nerve centres.

"Hearing Better in a Noise"—*Paracousis Willisii*.—When investigating the hearing-power of a patient, especially with bilateral defect of hearing, enquiry should always be made as to whether hearing is better in the midst of a noise, as, for instance, whether conversation is better heard in a train or omnibus or in the midst of a rumble or clatter. This is present in a large number of cases, and these are almost without exception cases of middle-ear disease (Roosa). Patients with nerve-deafness, especially when this is caused by exposure to noises—"boiler-makers' deafness" usually hear worse in a noise. Hence the symptom is of some diagnostic importance.

Functional Symptoms Differentiating Obstructive from Nerve-Deafness.—From our examination so far we may suspect nerve-deafness if:—

- (1) There is diminution of bone-conduction;
- (2) There is loss of hearing for very high-pitched tones;
- (3) There is decrease of hearing-power in the midst of noise.
- (4) Hearing for conversation is relatively better than for the watch.
- (5) Rinné positive; Weber negative.

Obstructive Deafness if:—

- (1) There is loss of air-conduction only, with negative Rinné;
- (2) There is better hearing for very high than for very low tones;

- (3) There is increased hearing in the midst of a noise.
- (4) Hearing for conversation is relatively worse than for the watch.
- (5) Rinné negative; Weber positive.

(b) PAIN,

or earache, of local origin is the most prominent symptom in acute inflammatory affections, whether of the external or middle ear, as also in the exacerbations common in chronic inflammation, as when reinfection of quiescent foci takes place and purulent discharges are pent up, or there is extension of caries or growth of cholesteatoma. Acute inflammation of the meatus or middle-ear is characterized by extreme pain, accompanied by impairment of the hearing function and febrile disturbance. The pain usually radiates up the side of the head. There often occurs, however, a *reflex otalgia* due to disease of the teeth, and, less frequently, to disease of the throat or tongue, but is then not likely to be mistaken for aural disease. There is then an absence of the other cardinal symptoms. If the pain is worst in the *mastoid* region, disease of that part must be suspected.

(c) IF THERE IS DISCHARGE,

its nature, quantity, and particularly its smell should be noted. The most usual discharge is one containing pus. If it is considerable in quantity, or contains mucus, it comes from the middle-ear. The inter-mixture with blood usually indicates the presence of granulations, but if a copious hemorrhage occurs late in a case of chronic suppurative otitis erosion of a blood-vessel is to be suspected. A sticky oozing is often present in eczema of the meatus, a serous and subsequently purulent discharge of slight abundance in external otitis. *If there is no discharge* it is necessary to enquire whether there has been a discharge at a former period, indicating a former suppurative otitis which may have left a permanent perforation of the membrane, or a cicatrix at the site of a healed perforation, or adhesions hampering the movements of the intra-tympanic structures. The smell of the discharge is of comparatively little diagnostic value at the moment, but if there is fetor it should be noted, because if under simple antiseptic treatment the offensive smell speedily disappears the prognosis is much more favorable than if it persists (Dench). Such persistence is probably due to disease of bone or retention of putrefactive material in the antrum or mastoid cells. The duration of the discharge and its mode of onset are of great significance. A recent sudden discharge, preceded by severe pain, indicates an acute inflammation of the middle-ear, but the occurrence of a discharge without previous pain should lead to investigation as to the presence of a tuberculous dispo-

sition. A suppuration may be of long-standing owing to neglect, to the presence of granulations, polypi, disease of the ossicles or temporal bone (simple, tubercular, syphilitic or malignant), involvement of the mastoid antrum or cells (epidermic accumulations, etc.), naso-pharyngeal disease or constitutional dyscrasia. The possible sequelæ of chronic, rarely acute, suppurative disease—meningitis, cerebral or cerebellar abscess, phlebitis of the lateral sinus and pyemia—must not be overlooked.

(d) TINNITUS AURIUM,

or "Noises in the Head," is the next symptom to enquire about. It is less commonly complained of by children than by adults, and its varieties are as numerous as patients' powers of description can make them. They may be complained of as humming, hissing, sound of escaping gas, rushing water, "sea shell," or sea waves, explosions, hammering, music, undistinguishable voices and distinguishable voices. They may be practically classified as follows:—

(A) PULSATING.

Arterial congestion in region of the labyrinth or middle ear.	Relieved by compression of the carotid or vertebral arteries.
---	---

(B) CONTINUOUS.

(a) Simple— Hissing, singing, high-pitched sounds, sea-shell, etc.	Increased tension in the middle ear, irritating auditory nerve.	Relieved by inflation of tympanum.
Deep humming.	Anemia. Aneurism.	Relieved by lying down, or by alcohol, or food. Audible on auscultation. Relieved by pressure on arteries.
Rushing.	Venous congestion.	Worse on lying down. Relieved by purgation.
(b) Elaborated— Bells, music, voices, etc.	Mental phenomena, sometimes induced by influence of aural disease on an excitable brain.	

Tinnitus is more often pulsating than patients admit. This may be tested by directing the patient to listen to the sound while one feels the pulse and beats time to it with the other hand. Many patients will then find that the tinnitus keeps time with the pulse, and the effect of compressing carotid and vertebral arteries should next be tested. If pressure on the common carotid in the neck checks or

diminishes the pulsation, the congestion is in the middle or external ear. If pressure on the vertebral arteries does so, it is in the internal ear supplied by the internal auditory artery, a branch of the basilar, which is formed by the junction of the two vertebrals.

Compression of the vertebrals is exercised by means of the thumb and middle finger of the right hand in the hollows behind and slightly

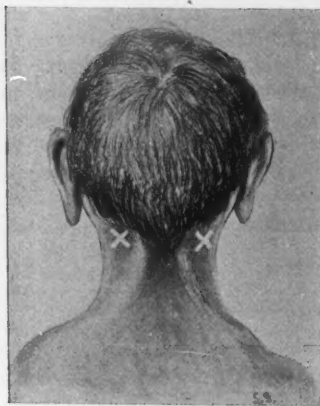


FIGURE 3. The spots where the vertebrals can be compressed, marked X.



FIGURE 4. Compressing the vertebrals.

below the mastoids, while counter-pressure is made with the palm of the left hand on the patient's forehead. The arteries are thus compressed in the suboccipital triangles as they pass round the lateral masses of the atlas.

The characters of the other sounds are practically explained in the table. It is important to remember that there are a number—if only a relatively small one—of cases of *tinnitus*, independent of *aural diseases*, which have to be excluded by means of tests for hearing, objective examination, history of the case, etc. *The stage in the disease at which tinnitus commences* is important, especially in cases of middle-ear catarrh, as the early occurrence of this symptom is characteristic of the intractable sclerotic variety.

(e) VERTIGO

arises from many causes besides ear disease. The *direction* of the tendency to fall should be noted. As a rule it is away from the affected ear. *Acuteness or suddenness of its first occurrence* should

lead to enquiries as to the presence of "Meniere's symptoms"—sudden vertigo of almost apoplectiform severity with disturbance of hearing, tinnitus aurium, and usually vomiting. These, when associated with loss of bone conduction and unpreceded by dullness of hearing, or other signs of ear-disease, justify a diagnosis of "Meniere's disease." More often they are secondary to middle-ear disease, and are due to sudden increase of pressure on the labyrinthine contents, as by a congested granulation pressing on the stapes. Similar effects may follow the touch of a probe or the injection of fluids, especially cold water.

Other forms of vertigo must be excluded. Thus:—

Ocular vertigo relieved by closure of the eye.

Gastric vertigo due to obvious digestive disturbance.

Renal vertigo an early symptom of cirrhotic kidney.

Laryngeal vertigo induced by a coughing effort.

Tabetic unsteadiness } with sufficiently distinctive symptoms.
Cerebellar titubation }

Anemia } of the brain.
Congestion }

Epilepsy, migraine, etc.

(f) VISIBLE ALTERATIONS

Will be considered in our next article.

EXTENSIVE NECROSIS OF THE PETRO-MASTOID FOLLOWING MIDDLE-EAR SUPPURATION.

BY M. D. LEDERMAN, M.D.

Lecturer on Diseases of the Nose and Throat, N. Y. Polyclinic; Attending Aural Surgeon,
University Medical College Dispensary; Assistant Surgeon, Manhattan
Eye and Ear Hospital, etc., New York.

It is not unusual to meet with marked softening and caries of the mastoid process in children, when this portion of the temporal bone has become secondarily affected from a suppurative otitis media. At this period of life, the bony structure does not offer much resistance to an infectious invasion, and pus readily finds its way to the surface. In the adult, however, the density of the cortical layer of the mastoid retards the progress of the pathological process in that direction, and consequently less resisting tissues become attacked, and extensive destruction may take place, without marked external manifestations. The appearance of general symptoms will establish the fact that a septic process is active in the economy.

The middle-ear cavity being peculiarly adapted for the propagation of the numerous pathogenic bacteria, and its location being in such close proximity to vital parts, we should never hesitate to promptly employ operative measures. We must not lose valuable time in deliberating whether the mastoid should be operated upon; for if symptoms exist which cannot be controlled by palliative measures, it is our duty to open the mastoid and carefully explore it for the *agens morbi*. Under antiseptic precautions this operation need never be feared; but I regret to state that we are inclined to delay this procedure. In cases of middle-ear suppuration, complicated by mastoid involvement, with existing cerebral symptoms, it is not imperative to attack the mastoid at once, as the intra-cranial pressure is the dangerous symptom, and should be relieved promptly if possible.

Through the kindness of Dr. David Webster, who referred the case to me, I am able to report the following history:

Phoebe B., sixty-two years old, came under observation April 16, 1895. She was a deaf-mute, with fairly good health. For a year she had been troubled with soreness in the right ear. There was at first a

scanty discharge, followed by some pain. These symptoms persisted with more or less severity up to the date of examination. Three months ago paralysis of the right side of the face occurred suddenly.

April 16, 1895.—*Condition at time of examination by Dr. Webster.*

—Right external canal filled with polypi, so that no view of the deeper structures could be obtained. There was a profuse and very offensive purulent discharge from right canal, with marked pain around the ear and on top of head. Some tenderness around auricle, especially in front. Temperature was normal. Urine examination proved negative. Dr. Webster thoroughly curetted external canal and tympanum, removing considerable polypi. Parts were cleansed with bichloride solution (1:5000), and packed with iodoform gauze.

April 18th.—Wound dressed. Very little reaction. Temperature normal. Discharge profuse, but less offensive. Cleansed with bichloride solution and peroxide of hydrogen twice daily. Canal packed with iodoform gauze.

April 21st.—Some improvement. Discharge profuse, but much less offensive.

April 25th.—Condition unchanged. Considerable bleeding when dressing is changed. Boric acid solution substituted for bichloride.

April 26th.—Treatment was continued, but discharge was very profuse. After cleansing with boric acid solution, the following powder was dusted into canal twice daily:

R Acid boric,
Alum aceto-tartrate.ãã, 3ij.
Lycopodium 3iv.

April 27th.—Discharge very offensive, and greater in quantity.

April 28th.—Number of polypi removed with curette. Some necrosed bone found posteriorly. Less discharge, but still very offensive. Some pain.

April 29th.—No reaction from previous manipulation. Discharge quite profuse, but less offensive. Marked tendency to bleed.

April 30th.—Tenderness on pressure over mastoid, with some swelling and redness. Leeches applied to mastoid.

May 6th.—As tenderness over mastoid still persisted, the case was turned over to me for operation. Temperature for the last few days remained around 101° F., but patient did not complain of chills. At examination I found the canal filled with pus and granulation tissue, which gave off an exceedingly offensive odor. Pressure over mastoid showed same to be very sore and boggy to the touch.

Under ether an extensive incision was made in the usual position, as I anticipated considerable destruction of the mastoid cells. Pus

appeared immediately after the first incision, and flowed quite freely. A large amount of dead bone and granulation tissue was removed by means of the curette. On probing, the tip of the mastoid was found necrosed, and same was removed, with the degenerated soft tissues found in the field of operation. In clearing out the upper and posterior portion of the antrum and cells the finger encountered the dura mater, proving the extensive spread of the suppurative process. Further manipulation succeeded in merging the tympanic cavity and mastoid opening into one. The external canal and middle ear were thoroughly cleansed by means of curette and antiseptic douching. Though the opening in the mastoid was very large, in fact corresponding to the entire portion of this part of the temporal bone, the lateral sinus had not been opened. Almost three fingers could be introduced into the wound, which was packed with iodoform gauze.

May 7th.—Patient passed a comparatively good night. Some retching after the operation, which was rather prolonged. Temperature $99\frac{1}{2}^{\circ}$ F., mouth.

May 8th.—Temperature normal. Dressing removed, and some discharge from canal was observed. Wound otherwise clear. Packed as before, and dressed daily with hydrogen peroxide and bichloride solution.

May 9th.—Wound clear. No odor. No discharge. No rise in temperature. Slight pain in head.

May 10th.—Some slough on posterior wall of cavity, with more discharge and odor.

May 11th.—Slough was removed with forceps. Ordered parts to be cleansed with Labarraque's solution.

May 13th.—Wound normal. No odor.

May 15th.—Granulations springing up rapidly near surface. These were cauterized, and wound dressed as before.

May 18th.—Condition improving. Wound clean and rapidly filling.

May 20th.—Surface granulations again cauterized.

May 25th.—Small sinus found on inner wall of cavity filled with pus and debris; same was curetted and packed with gauze. Temperature $99\frac{1}{2}^{\circ}$ F.

May 26th.—Sinus cleansed; not so much discharge, and opening larger. Remainder of wound healthy and granulating slowly.

May 30th.—Improving. Wound clear and sinus healing.

June 9th.—Odor more offensive, and wound cleansed of unhealthy granulations.

June 11th.—Hemorrhage from mastoid through ear, nose, and mouth, saturating dressings. Wound cleansed and redressed, 7 p. m.

Severe hemorrhage in naso-pharynx. Posterior tamponing had to be resorted to by the house-surgeon, Dr. Thomson, to arrest same. Patient quite weak.

June 12th.—Bleeding again appeared, but was checked by firmly packing the mastoid opening with gauze. Inability to move the left leg and arm was noticed for a few days past. Marked depression resulted from the loss of blood, and the patient gradually weakened until she passed away ten days later.

REMARKS.

At the necropsy a probe was passed into the mastoid wound in a posterior direction for a distance of almost two inches, showing the remarkable loss of osseous tissue. Almost the entire mastoid process, together with a decided part of the petrous portion of the temporal bone, was destroyed by the necrotic process. Communication between the posterior and middle cerebral fossæ had been established through the upper portion of the wound. As the patient had been confined to the bed from the time of the operation until her death, no disturbance of equilibrium was observed, though the semi-circular canals were involved. The hemorrhage in the last days resulted from ulceration of the lateral and inferior petrosal sinuses. Her condition of mutism kept indicative symptoms hidden, though cerebral action itself was never impaired. That the necrotic destruction had been going on for some time previous to the external manifestation of the mastoid involvement, is shown by the marked facial paralysis early in the disease. During the illness no changes were observed in the optic nerves. Softening of the lower portion of the right temporo-sphenoidal lobe of the brain was found, accounting for the paralysis of the arm and leg on the opposite side.

128 E. 60th St.

POST-NASAL ADENOID HYPERTROPHY:

With Especial Reference to the Importance of its Early Recognition by the Family Physician.

BY J. E. SCHADLE, M.D., ST. PAUL, MINN.

Instructor of Clinical Laryngology in the Medical Department of the University of Minnesota; Laryngologist to St. Luke's Hospital and the Free Dispensary; Fellow of the American Laryngological, Rhinological and Otological Society; Member of the Ramsey County and the Minnesota State Medical Societies; Member of the American Medical Association, etc.

Post-nasal adenoid hypertrophy is a disease of the naso-pharynx, a cavity embodying important anatomical and physiological relations in the mechanism of respiration and audition. Communicating with the nose, throat and ears and contributing to their functioning powers, the abnormal naso-pharynx exercises morbid influences over these associated cavities, which impair their usefulness and not infrequently produce organic changes.

The disease is one peculiar to childhood. It prevails in all countries (Meyer). The physician who assists at the infant's birth and prescribes for it through its early life should especially be able to recognize this abnormal condition of the post-nasal space, for undoubtedly to adenoid vegetations are due many of the nervous and nutritive disturbances of the young.

Coming in contact almost daily with the disorder and observing how little consideration is given to it, I hope by a presentation of its practical aspects to interest the general practitioner and bring him into closer relationship with the affection.

During the past fifteen years nose and throat specialists have been the only contributors to the literature of the subject, and none will question the benefit humanity is deriving from their work along these lines. In recognition of this fact a forcible argument is furnished in the present movement among laryngologists to raise funds for the purpose of erecting a monument to the memory of Dr. Wilhelm Meyer, of Copenhagen, to whose investigations and teachings we are indebted for much of what is now known of the malady.

Post-nasal adenoid hypertrophy is not infrequently attended by

serious and formidable consequences. Prominent among these is obstruction of the nose. Through respiratory interference deficient oxygenation of the blood results, establishing a process of carbon di-oxide poisoning, impairing nutrition and inducing anæmia—conditions from which recovery is sometimes protracted even after the function of nose-breathing has been fully restored.

The cause of chronic otorrhœa in the child in the majority of cases can be found in the existence of adenoid vegetations. Inflammatory states of the tissue brought on by exposure to temperature changes or to the exanthematous diseases, generally give rise to catarrhal disease of the middle ear, which may eventuate into a persistent otorrhœa or mastoid complication. They also prevent perfect ventilation of the drum. Defective hearing in the young sometimes wholly depends on this condition.

Laryngismus stridulus, or spasm of the larynx, an affection which suddenly manifests itself in the night, causing alarm and disturbing the child, is no doubt an effect of the occlusion of the nose, the larynx becoming hyperemic, dry and irritable in consequence of the mouth-breathing.

Choreiform movements of the soft palate, I found, in a few cases coming under my observation, to have been a reflex phenomenon of the post-nasal vegetations.

Alterations of the voice and laryngeal, bronchial and nasal catarrhal inflammations may arise from the same source, and produce an infinite amount of annoyance. Atrophic rhinitis I believe is very often super-induced by the disease when the systemic conditions are favorable.

Thoracic deformity and imperfect pulmonary aeration are frequent damaging consequences. Wry-neck has been traceable in its reflex cause to adenoids. Nocturnal incontinence of urine is an occasional accompanying occurrence.

Not only the physical, but also the mental growth of a child is retarded. Instances where through the agency of inheritance the tuberculous or scrofulous taint is present, the consequences are serious and the struggle for existence difficult.

Children afflicted with adenoid vegetations and allowed to go on without obtaining relief, are certain to fall below that measure of health and strength to which they would else have attained. They grow up sickly and feeble, and the event is looked upon as a visitation of Providence. The severer forms will tell on their whole future existence—growth will be stunted; energy will be deficient; maturity will be less vigorous than it ought to have been; and success and happiness in life will be hindered. Their ultimate physical power and

their efficiency as men and women will inevitably be more or less diminished by it.

Can all this consequent injury be obviated? It can, by early recognition and removal of the trouble.

Due either to ignorance, negligence or prejudice, very generally the family physician himself is responsible for the development of the disease whose effects we see are mischievous and far-reaching. To advise that the child will out-grow the difficulty is criminal, though it be known that after the period of adolescence atrophy of the growths may take place.

The lymphoid mass in a state of hypertrophy is also known as the pharyngeal or "third" tonsil, which in structure is not unlike that of the tonsils of the fauces. When microscopically examined, it is found to be a retiform network of connective tissue which is filled with lymph corpuscles. The growths are richly supplied with blood-vessels and are covered with a layer of ciliated epithelium, resembling more or less the mucous membrane from which they take their origin.

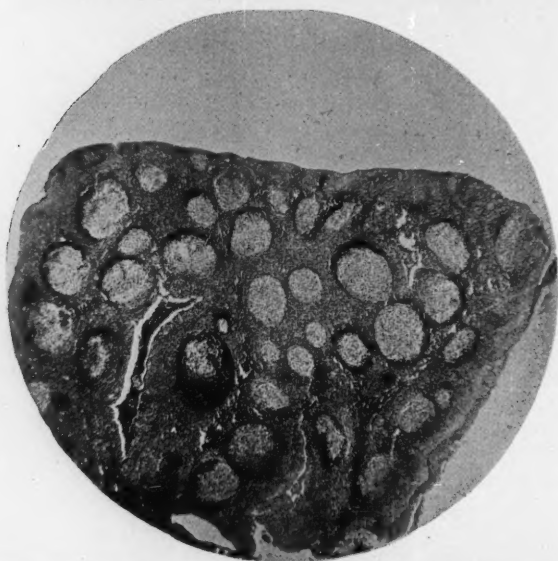


FIGURE 1. Transverse section of one lobe, post-nasal adenoid. The adenoid is covered with a thin layer of stratified (pavement) epithelium which rests directly on the adenoid tissue beneath. One of the lymph-nodules is shown more largely magnified in Fig. 2. 15 diam.

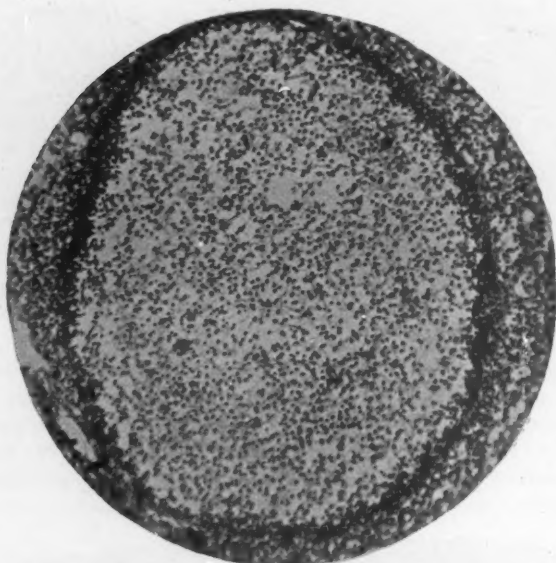


FIGURE 2. Showing the reticulated tissue in the meshes of which are lymphoid cells. The nodule is surrounded by more dense adenoid tissue. 125 diam.

Figs. 1 and 2 represent a transverse section of, and a lymph-nodule in post-nasal adenoid, as shown under the microscope.



FIGURE 3. Adenoid growth.

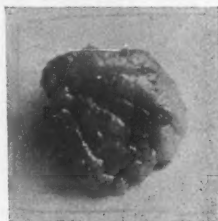


FIGURE 4. Adenoid growth.

In illustrations 3 and 4 (natural size) are seen an adenoid growth removed from a girl eleven years old, in whom atrophic changes of the nasal passages were well marked. (Fig. 3 representing the free, and Fig. 4 the cut, surfaces.)

Inspection of the accompanying figures will give some idea of the varied appearances post-nasal vegetations may assume.

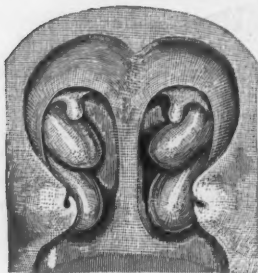


FIGURE 5.

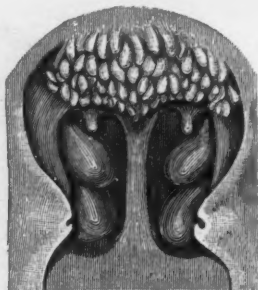


FIGURE 6.

Fig. 5 represents a normal naso-pharynx.

Fig. 6 represents the vault of the pharynx covered with adenoid excrescences found in infants, and may be termed congenital. It is reasonable to believe that, through long-continued inflammatory actions brought on by environment and temperature variations, the enlarged adenoids of youth have a primary origin in and development from the congenital variety.

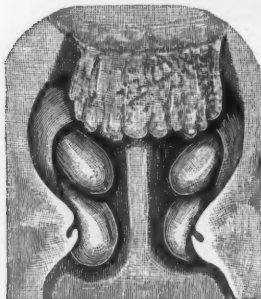


FIGURE 7.

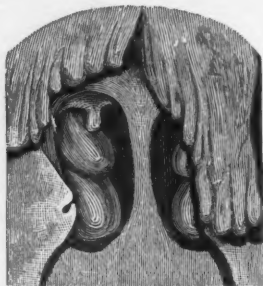


FIGURE 8.

Fig. 7 represents a growth quite common.

Fig. 8 is illustrative of a case referred to me some years since, and represents the "stalactite" form of the disease, the formation on the right resting on the cushion of the Eustachian tube and covering its opening. The patient, male, eighteen years old, gave history of deafness and *tinnitus aurium* of long standing, which did not yield to the treatment of a competent aurist who had his case in charge. A rhinoscopic examination revealed the picture shown. The growths were removed by the use of the cold snare, with the result of restoration of hearing.

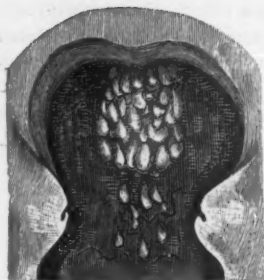


FIGURE 9.



FIGURE 10.

Fig. 9 represents a condition where a lymphoid mass occupies the posterior wall of the naso-pharynx and forms a serious impediment to voice production.

Fig. 10 represents an incomplete curettage, and shows remnants of adenoid tissue still veiling the upper part of the posterior nares, which ought to be got rid of, else partial stenosis will still remain.

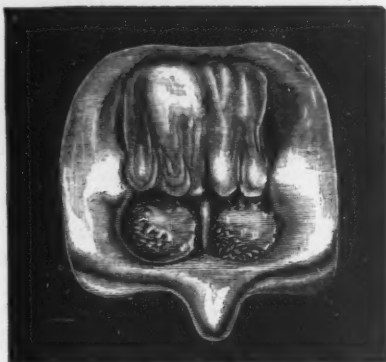


FIGURE 11.

Fig. 11 illustrates the post-nasal cavity and posterior nares of a boy, eleven years old, at present under treatment. The pharyngeal tonsil is here seen to almost fill the vault, hiding at the same time the choanæ of the nose. It is quite interesting to note the relative position of the growth to the Eustachian structures. Further examination brings to view chronic thickening of the lower turbinal bodies, which, in conjunction with the adenoid growth, forms a formidable barrier to respiration.

The clinical signs or physiognomy of post-nasal vegetations are characteristic and unmistakable. The open mouth, the pinched nose, the drawn-down inner canthi, the elevated eye-brow, the corrugated skin of the forehead, the distorted chest, the apparent mental deficiency, the altered or "dead" voice, and the defective general development, evidence the presence of the trouble.

Observe the facial expression of the boy in illustration 12. Nothing could be more significant.



FIGURE 12.

When this patient was brought to me by his father, who is an intelligent man, I was asked: "What is the matter with my boy; he does not seem to be mentally right?" The history given was in brief as follows: Aged nine years; showed signs of decided nasal obstruction at the age of two, before which he had had the "sniffles" at frequent intervals. The stenosis gradually increased and eventually mouth-breathing became fully established. Deformity of the sternum was marked; sleep was disturbed; had night terrors; suffered from enuresis; was nervous, irritable and cross; arose mornings fatigued and stupid; took no interest in books or the sports of his playmates; never had diphtheria or scarlatina. He was quite deaf, but at no time did he have suppuration of the ears. Owing to an inability to blow the nose, a muco-purulent secretion, producing excoriations of the nostrils, was a source of constant annoyance.

On examination of throat, the tonsils were found to be enlarged. By retracting the soft palate and using the rhinoscopic mirror, inspection of the naso-pharynx revealed a "third" tonsil which, in consequence of its unusual size, quite filled the cavity and encroached on the Eustachian orifices. Complete removal of the obstruction was followed by a subsidence of the symptoms, and in illustration 13 is seen the appearance of the patient eighteen months after operation.



FIGURE 13.

A comparative study of the two pictures tells the story, and further comment is unnecessary. The subsequent history is to the effect that, instead of being disinterested, the boy has new life and is ambitious.

Some one has said: "It is babyhood that has made man what he is." This important period of life should then be respected, and the infant struggling for existence should have all avoidable obstacles removed which may tend to interrupt the processes of development. Occasions sometimes present themselves when the child at its mother's breast is unable to perform the function of taking food in consequence of the embarrassed nasal respiration dependent upon the presence of post-nasal vegetations. The medical advisor under such circumstances should look beyond the frænum of the tongue for the cause of the impediment.

By posterior rhinoscopy or by the insinuation of the forefinger into the post-nasal space, the diagnosis is easily made. Seen by the aid of the mirror, the various forms of growths appear as set forth in the foregoing illustrations.

Not infrequently they are observed to obscure the greater part of

the posterior nares, septum and the Eustachian tubes. A single growth or red lymphoid mass, hanging down from the vault of the pharynx, is all that can be seen in most cases, while others consist of excrescences, aggregated or separated, covering the roof.

In the examination of children the employment of the mirror is not at all times practical. When this is the case no better method than the use of the index finger presents itself. It is well known that an educated sense of touch serves the surgeon, no matter in what department of surgery he may work, a purpose which is both invaluable and helpful in formulating a diagnosis. The accomplished obstetrician does not resort to the use of a vaginal speculum in order to determine the progress of labor. His trained digit receives the impressions and gives the information as to whether or not the os is rigid, soft or dilating, etc. The same holds good in explorations of the nasopharynx. Should adenoids exist, the finger determines the magnitude and the nature of the presenting condition. When touched the sensation given has been described as that of a "bag of worms," which on manipulation is sometimes followed by slight hemorrhage.

The treatment is surgical, differing only in the methods employed. When feasible, excision should be done under illumination, because the outlines of the tumors are thus brought into view, whereby the operator is enabled to use his instrument with greater precision. Should it be a snare, the adjustment of the wire loop around the mass is made more easy; a post-nasal cutting forceps, the adjacent structures remain uninjured; or a curette, the mucous membrane of the posterior wall of the naso-pharynx escapes being stripped from its attachment, a circumstance liable to occur when the operation is in the hands of a novice.

Cocainizing the parts and drawing forward the soft palate with either hook or tape, the operation is made both easy and satisfactory.

If, owing to nervousness or fear, the patient is not able to co-operate with the surgeon, then a general anæsthetic (chloroform being preferable) should be administered. The anæsthesia should not be carried to complete narcotization, for the reason that the laryngeal reflexes ought to be preserved in order to obviate serious trouble which might come from blood or other foreign matter finding its way into the larynx. The patient with gag in mouth is now placed on the operating table, face downward, and head inclining over its edge. This position allows gravity to take care of the blood, the flow of which for the moment is profuse, by causing it to escape from the nose and preventing its diversion toward the throat or stomach. Observing thorough asepsis of the hands, and having the nail neatly trimmed to an oval

point, hardened by previously immersing it for a few minutes in alcohol, the fore-finger of the operator is introduced into the post-nasal space, care being exercised at the same time that the soft palate is not rolled up in front of the finger and bruised. Commencing in the median line of the vault at the septum, and gradually working to either side, the growths are detached and broken up. If thoroughness is practiced, relief is sure to follow. Occasionally it happens that a second attempt at removal with the finger nail is required, especially when the vegetations are largely composed of connective tissue. Infants whose sensibilities are not acute, do not need an anæsthetic, because the lymphoid nodules, depicted in Fig. 6, can be readily detected and detached without producing much discomfort. This I have often done successfully on patients whose ages ranged from one month to several years. But little after-treatment is necessary. It should be noted that, in children in whom the adenoids are large and the accompanying symptoms pronounced, complete recovery may be slow. The open mouth may remain so, or for an indefinite period at least, in consequence of the apparent paresis of the *obicularis oris* muscle.

I am indebted to my friends—Dr. J. H. Stewart, for drawings, some of which were taken of growths while the patient was in the operating chair, the cuts of which herewith presented so graphically illustrate the various forms of adenoids; and Dr. W. C. Borden, U. S. A., for the two excellent photomicrographs of lymphoid tissue.

NEW INSTRUMENTS.

A New Nasal Saw, to be Run with the Electro-Motor.

BY G. MELVILLE BLACK, M.D.

Professor Laryngology and Rhinology in the Colorado School of Medicine, Denver, Colo.

Some time ago I wrote to Tiemann & Co., sending them a drawing of a nasal saw to be run with the electro-motor, requesting them to make an instrument after the plans enclosed. They informed me that they had two saws in stock to be run with the electro-motor, one of which was designed by Roe, and the other by Potter. They sent them both to me to see if either would suit me; if not, if I could use any part thereof, it would enable them to construct a saw after my designing with less experimenting and in a shorter space of time. Potter's saw was designed in such a way that the rotary motion of the motor shaft was converted into a forward and back movement by a cam, the saw blade having about a half-inch stroke. The cam movement, together with the enormous stroke, gave the instrument such great vibration that I found it difficult to hold the instrument in my hand. I found that I could stop the saw by pressing lightly on the top of the blade. I then turned my attention to Roe's saw, which was to my mind equally faulty. It had a half-inch stroke, but could be reduced to a quarter inch, but even with the lesser stroke the vibration was enormous. The ease with which Roe's saw could be stopped was largely due to the manner he had adopted of attaching the motor shaft to the saw. This was done by means of a flexible spiral shaft which joined to the saw at right angles to the handle. I do not know what object Dr. Roe had in making this shaft flexible; but be that as it may, it was a bad piece of mechanism, for when there was any pressure on the saw blade this spiral shaft would kink up and cause a great deal of annoyance. I attempted to correct this by having Tiemann replace it with a solid shaft, but still I found I could stop the movement of the saw by pressing firmly with my finger on the top of the blade. I then found the trouble was due to the shaft being connected to the saw at

its side, and at right angles to the handle. The weight of the shaft running from the motor to the axle of the drive wheel was so great as to cause the axle to bind on its collar. The one feature of Roe's saw that I adopted was the drive wheel. This drive wheel propelled a rod connecting with the saw blade, and was attached to the drive wheel with a screw at a little distance from its center. This method of converting a rotary into a forward and back movement seemed to me to be simpler than the use of a cam, which was my first idea.

The saw blades used in Potter's and Roe's saws were very faulty, being too thick, and with too many teeth to the inch. In short, I found the mechanical defects in each so great that neither was practicable without material modification.

The following is a cut of the saw as perfected:

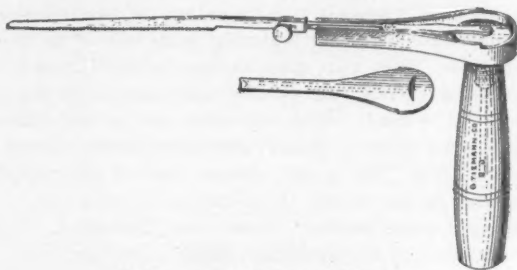


FIGURE 1. Black's Electro-Motor Nasal Saw.

The only difference between this saw and the one I originally intended having made is in the adoption of Roe's drive wheel, and in consequence Tiemann & Co. used the same shaped metallic case as used for Roe's and Potter's.

The above saw has an eighth of an inch stroke. I learned by experimenting with the other saws that a very short stroke was necessary to overcome the excessive vibration. With this short stroke this objection is overcome. The hand piece of the motor shaft is pushed into the handle of the saw, the weight of the shaft is in consequence in a downward direction, is out of the way, does not overbalance the saw as in Roe's instrument, and there is no binding of the axle. It is almost noiseless, and when at the height of its speed no amount of pressure on the saw blade will stop it.

The blade used is a regular Bosworth blade, which to my mind is the only blade worth anything on the market.

Almost all men specially fitted for rhinological work now have an electro-motor of one-eighth horse power. This is the kind of a motor I use, and I find it has ample power to run the saw to perfection. When ordering this saw of Tiemann, it will be necessary to specify what kind of a hand piece is used, so that the proper kind of a stem can be made to fit it.

When removing a large septal spur by hand I feel sure that most of you have been compelled to stop several times to rest. The short, rapid stroke required for this operation I have found to be very fatiguing. With this saw I can remove a large septal spur in one-fifth the time required to do it by hand, and with no fatigue. These operations are always more or less bloody, and I find when operating by hand that it is frequently necessary to stop to allow the patient to clear the blood from his throat. With the motor saw the spur is removed so quickly that the patient experiences no difficulty from blood accumulating in his throat; hence it is not necessary to remove the saw from the seat of operation from the beginning to the end of the procedure. Again, we often meet with spurs far back on the septum or high up on that structure, where there is not room enough for the length of stroke required by hand. With the motor saw all the room required is a little over an eighth of an inch; hence any growth from the septum becomes accessible. The greatly reduced time of the operation and fatigue to the operator renders the instrument of much value.

In closing, I desire to thank Messrs. Geo. Tiemann & Co. for the accurate execution of my instructions, and the very low price at which they have placed the saw on the market.

EDITORIAL DEPARTMENT.

EDITORS AND PROPRIETORS.

FRANK M. RUMBOLD, M.D.

M. A. GOLDSTEIN, M.D.

ASSOCIATE EDITORS.

M. D. LEDERMAN, M.D.
New York.

S. SCOTT BISHOP, M.D.
Chicago.

W. SCHEPPEGRELL, M.D.
New Orleans.

F. B. EATON, M.D.
San José, Cal.

FOREIGN EDITORS.

DR. J. DUNDAS GRANT,
London.

DR. VICTOR URBANTSCHITSCH,
Vienna.

DR. J. J. KIRK DUNCANSON,
Edinburgh.

DR. A. HARTMANN,
Berlin.

DR. J. K. KIMURA,
Tokio.

DR. J. STERLING RYERSON,
Toronto.

Terms \$2.00 per annum, in advance. Foreign Countries, within the Postal Union, \$2.25.

All communications and all checks, drafts and money orders should be addressed to

THE LARYNGOSCOPE,
P. O. Box 787, St. Louis.

EDITORIAL.

OUR NAME.

“What’s in a name?” A name is the “title by which any person or thing is known, understood or spoken of.” It was not an easy task to select a comprehensive single word, descriptive of the trio of specialties to which the journal will be devoted.

The word “laryngoscope” was a term formerly applied only to the mirror employed in the examination of the larynx; but, with the progress of the studies of the upper air passages, this instrument became of use in the examination of other cavities, until now the complex illuminating apparatus designed by Mackenzie, Tobold, Bezold, *et al.*, operated by lamp, gas or electricity, styled the “laryngoscope,” would broadly designate an illuminating instrument for use in the examination of diseases of the nose, throat and ear.

With this explanatory remark for the use of the name, we beg leave to introduce the LARYNGOSCOPE to the medical profession.

OUR ASSOCIATES.

The names of our Associate Editors is sufficient guarantee to the reading medical public that the advances made in the specialties represented by the LARYNGOSCOPE, in their several sections of our country, will be ably presented by them. Our Foreign Editors are all men of note in the medical world, and need no introduction. To each and all of our associates we desire to express our gratitude that we have been able to interest them in our undertaking.

TO OUR FRIENDS.

To the many friends who have so generously promised to assist us by their contributions we desire to express our sincere thanks, as also to the more than three hundred specialists and general practitioners who assured us of their support by sending their subscriptions in advance of the publication of the initial number.

WE REQUEST YOUR CO-OPERATION.

To those of *the profession* who receive this, the initial number of the LARYNGOSCOPE, we respectfully appeal for support and assistance in our undertaking. Give us your moral and active support. Send us your subscription, and also the names of your friends whom you think will be interested in seeing a copy of the JOURNAL.

OUR PROSPECTS.

It is not often that a periodical, especially a medical monthly, is able to secure in advance of publication any subscriptions, except from individual friends of the promoters of the venture. The fact that we have received the subscriptions of over three hundred of the prominent members of *the profession*, would seem to indicate that there is a field for the LARYNGOSCOPE, and as a forerunner of future financial support shows that our prospects are good.

NEWS ITEMS.

We earnestly request secretaries of medical societies having a section devoted to the interests of diseases of the nose, throat and ear, to communicate with the LARYNGOSCOPE, giving the names of the officers and place and date of meeting, so that we can publish a comprehensive society directory.

WHAT THE PROGRESSIVE DOCTOR NEEDS.

In these days of rapid medical progress, when books become obsolete in a year or two in their bacteriology and treatment of some diseases, such as diphtheria, when advances are not made step by step, but bound by bound like the leaping hound, the ordinary medical mortal is left behind, distanced, and out of the race if his sole reliance is placed on his book-shelves.

Current thought and contemporary work are recorded in current literature; but so widely diffused throughout the general medical press that the specialist and his half-brother, the general practitioner, who must perforce do special work, lose too much valuable time in culling the material that is useful to them. For him who devotes his studies and practice to the nose, throat and ear, no truly representative American journal exists. Those that approach it divide their space between these subjects and the eye, with such a preponderance of ophthalmologic literature as to swamp nearly out of sight, as a mere side issue, the triple specialties.

Our cousins, the English, have their representative of the devotees of the three specialties, and the French have shown similar enterprise. If a small fraction of the 100,000 physicians in America manifest their purpose of keeping abreast of the fast-flying times in these important subjects by supporting the labors and the initiatory financial sacrifice of the founders of such a journal, the establishment of the *LARYNGOSCOPE* will prove, as it ought to, a credit and a profit to American medical enterprise. Its field of usefulness is large and well cultivated by men of high attainments. It should be a lens to focus the best and broadest learning of the three specialties, both at home and abroad; a mirror to reflect the advancing march of progress. Let us hope this may be the scope of the newly-launched *LARYNGOSCOPE*. S. S. B.

It is the intention of the *LARYNGOSCOPE* to present to the profession the essence of practical experience of those interested in diseases of the nose, throat and ear. We do not offer this periodical as a monthly issue published solely for the benefit of the specialist, but trust that the busy and ever-advancing general practitioner may find it a source of comfort and an epitome of valuable information.

We freely appreciate that many mighty and excellent therapeutic suggestions are overlooked, owing to the voluminous mass of current literature. We desire to tender worthy material in a condensed but useful form, so that unnecessary reading may be avoided, and only the vital matter given due prominence. Original thought and clinical deductions will assuredly receive prompt and deserving recognition.

Many eminent gentlemen have promised their earnest co-operation, and we sincerely trust that the first monthly journal devoted to diseases of the nose, throat and ear will receive the undivided support of the profession at large.

M. D. L.

Although the years in which the scientific study of the diseases of the nose, throat and ear has been given special attention are yet few, still the subject has spread with such rapid strides that this branch of medicine has long since required the publication of separate journals, so that those who interested themselves in these branches could have a medium through which to obtain the latest and fullest information on the subject.

Not only has the number of those who give their undivided attention to diseases of the nose, throat and ear increased; but the general practitioner, through the instrumentality of post-graduate courses and the introduction of rhinology, laryngology and otology as a part of the curriculum of our prominent colleges, now gives more and more attention to this subject; and with the increase of information in this direction comes the desire to keep up the acquired knowledge and to build up on the foundation established in the elementary courses.

For these especially who, from their rapidly-increasing knowledge of laryngology and the allied branches, require special recognition, and for the large number of faithful workers who have made these their specialty, the LARYNGOSCOPE has been launched. Its pages will be filled with short and pithy articles of interest to the object of the publication, and it will be endeavored, in each monthly issue, to keep the reader posted on all important advances in rhinology, laryngology, otology and allied literature.

The communications in the LARYNGOSCOPE will by no means be limited to writers who give their exclusive attention to the diseases of the nose, throat and ear. While interesting articles from these valuable writers will always be appreciated, still the general practitioner is especially invited to contribute the record of his experience in nose, throat and ear cases. It is well known that many acute diseases of this class come under the care of the family physician; and these, as well as the throat and ear complication of many of the exanthema and other diseases, will render their articles of such value that these contributions will be made especially welcome.

A prominent physician, on seeing the prospectus of the LARYNGOSCOPE, remarked: "Why, the first number alone will be worth the price of subscription." The object of the editorial staff will be to make each number of similar value; and with the hearty co-operation of the medical profession this object will not be difficult of attainment.

W. S.

SELECTIONS

FROM CURRENT MEDICAL PUBLICATIONS.

RHINOLOGICAL.

A New Position for Major-Nasal Operations.

Carl Seiler describes a new position for major operations within the nasal cavities (*Maryland Medical Journal*). Where general anesthesia is necessary, as in large fibroid tumors or rhinoliths, it is very often necessary to plug the posterior nares and perform tracheotomy, making the operation more tedious and complicated. To avoid this, he has for several years employed a method which he has found satisfactory in these cases. He places the patient on a table in a ventral recumbent position, with the head projecting over the table, and held in a horizontal position by a band around the forehead, which is held by an assistant or by a firm support attached to the table. While the relative topography of the parts are changed, still this does not render the operation more difficult than when the patient is in a dorsal or lateral position. During the operation, the blood flows downward from the mouth or nostril, without any risk of suffocating the patient. While operating, he depends much upon the sense of touch; but where the light is necessary, he lies upon his back on the floor, and reflects the light in the usual manner; when in this position the relative topography of the parts are re-established.

W. S.

The Etiology and Treatment of Post-Nasal Catarrh.

W. Freudenthal, in the *Journal of the American Medical Association*, gives some useful points regarding the treatment and etiology of post-nasal catarrh.

The naso-pharynx is a part of the respiratory track, as it is lined with columnar ciliated epithelium. Although Aschenbrandt has demonstrated in his experiments, that the greater portion of the warming and moistening of the inspired air is carried on in the nostril, still

these experiments were conducted in normal subjects. Freudenthal has made a number of experiments in pathological subjects, as well as normal, and has found that the naso-pharynx is a very important adjunct to the nostril in its respiratory functions. In a case in which the nostril of the patient had been very extensively cauterized for four years, so that the nostrils were able to carry on only 25 per cent. of their function, yet this patient felt no inconvenience whatsoever, (?) showing that the naso-pharynx had contributed very largely in preparing the inspired air in this case. He attributes much of the prevalent catarrhal troubles to defective methods in warming houses, the heat of which is almost always too dry. The common idea that we catch cold on account of defective dress, is erroneous; the true reason being that we do not live enough in the open air, and do not admit enough fresh air into our houses. Children who go barefoot are not as subject to colds as those who wear shoes. The underwear should only be worn to the extent that it is necessary, so as not to interfere with the cutaneous respiration. W. S.

Sarcoma Presenting in the Nasal Fossa.

Four months after removal of what seemed to be a myxoma, the right nasal cavity was found to be occluded by a round-celled fibrosarcoma, in a female twenty-six years old. Repeated curettage was carried out, but it became necessary to remove the body of the ethmoid bone by external operation. It is supposed that the polyp was the result of irritation due to the presence of the malignant tumor.—HARRING, *British Med. Journal*, Feb. 29, 1896. M. D. L.

LARYNGOLOGICAL.

Diseases of the Mouth, Nose and Throat as Pathological Factors in Gastritis.

F. B. Turck, in the *Medical Fortnightly* has an article on "Diseases of the Mouth, Nose and Throat as Pathological Factors in Chronic Glandular Gastritis, with Bacteriological Studies of the Pharyngeal Vault."

Bacteriological studies have shown that upon the mucous membrane of the mouth, nose and pharynx groups of micro-organisms are found, which are also present in the stomach during gastritis. Under normal conditions the mucous membrane of the stomach does not favor coloni-

zation upon its walls, but during pathological processes micro-organisms may develop. The mouth, nose and throat, in diseased conditions, are incubators, ready to infect the stomach when diseased conditions permit the development of growing micro-organisms upon its walls; these bacteria being carried into the stomach during the act of swallowing. Turck, in his clinical and experimental work, has demonstrated groups of micro-organisms obtained from the gums and cavities of the teeth, similar to those found in the material from the walls of the stomach, obtained by the gyromele (revolving sound). He reports several cases, in which he shows that many of the pathological micro-organisms present the identical biological and physical forms in cases of gastritis as found in the mouth and post-nasal cavities of the same patient.

W. S.

Serum for Tuberculosis.

Paul Paquin, of St. Louis, at the last annual meeting of the Mississippi Valley Medical Association, spoke in favor of his serum for tuberculosis. H. W. Loeb reported cases in which he had good results with the serum in laryngeal tuberculosis, and Paquin in the discussion stated that the new remedy was still in its infancy, and would no doubt be improved in the future. While he had had failures, still forty or more recoveries proved the efficacy of the serum. The best results are obtained in the acute, and not in chronic cases. The treatment should be kept up for six months, or longer. He has made more than 10,000 injections in tubercular patients, and cannot recall a fatal result. He counsels the careful study of the climate, as well as of the patient, before sending him away.

W. S.

Asthma.

A case of asthma cured by the inhalation of the vapor of peroxide of hydrogen is reported by Dr. W. B. Ketchum (*The Texas Health Journal*). The patient had been subject to attacks of asthma for ten years, until she was directed to inhale the vapor from an inhaler which contained equal parts of glycerine and peroxide of hydrogen. After she had used this treatment for one month, the patient reported herself as "cured." (?)

W. S.

Post-Diphtheric Paralysis.

Dr. W. O. Jenkins believes that there is no relation between the severity of the attack of diphtheria and the frequency of occurrence, or extent, or degree of the paralysis following (*Indiana Medical Journal*). The attending physician should therefore be

very guarded in his prognosis in every case of diphtheria. Cardiac paralysis is a most unfortunate complication in this disease, and may follow a light attack, or at a time when the patient is considered convalescent. He describes a case occurring in his practice in which the little patient had so far recovered that he had ceased his visits. A few days afterwards the child was sitting up in bed playing with its toys, when the mother, who had gone into an adjoining room, heard a groan, ran back to the bed and found the child dead.

Paralysis follow in certain cases of diphtheria regardless of the method of treatment. While some claim that antitoxin diminishes the probability of this complication, this has not been his experience, and a careful study of statistics shows that paralysis develops in cases treated by antitoxin as frequently as in any other method. W. S.

Hypertrophy of the Lingual Tonsil.

Edward Tompkins gives a report of a number of cases of hypertrophy of the lingual tonsil (*Virginia Medical Monthly*).

The symptoms most often observed are a dry cough, fatigue after speaking or singing, and an irritation in the throat, on account of the epiglottis being hampered in its action by the lymphatic tissue. These symptoms are most aggravated in nervous patients. Temporary relief is sometimes obtained by astringent gargles, but a total removal of the hypertrophied tissue is the only rational treatment in most cases. He finds the galvano-cautery useful, but dangerous in the hands of inexperienced physicians. The snare can only be used when the hypertrophy is very prominent—he prefers Myler's gilotome, which will quickly remove even small and sessile growths. He has not seen any alarming hemorrhages in the cases in which he has used this instrument. W. S.

A Case of Death from the Administration of Nitrous Oxide

Is reported in the *Druggists' Circular*. A young woman dying under the anæsthetic, which had been given for the removal of four teeth. The same patient had taken this anæsthetic on a previous occasion without feeling any bad effects from its action. Dr. Dundas Grant, in discussing a paper on "Adenoid Vegetations," read by Dr. Yersand Arslan, at the Fifth National Congress of Otology, recently held at Florence, stated that he performed these operations under nitrous oxide on account of its safety; and a number of surgeons used this as a routine anæsthetic for minor operations. A report of this, and other similar cases, should admonish care in the administration of this as well as of other anæsthetics. W. S.

Traumatic Hæmatoma of the Right Pyriform Sinus.

The patient showed no abnormality on external examination, except that the right upper part of the thyroid cartilage was sensitive on pressure. On laryngoscopic examination a red tumor was seen, and digital manipulation revealed abnormal mobility of the right cornu of the thyroid cartilage. The author believed that the cornu was fractured.—ROSCHIER, *Journal L., R. et O.*, May, 1896. M. D. L.

Angio-Neurotic Edema.

In this instance the disease attacked the uvula, pharynx and nose of a young lady of nervous temperament. Suffocation was feared owing to the involvement of the larynx. Its onset was sudden, and was preceded a few days by an attack of hay fever. The edema rapidly disappeared and was followed by an attack of urticaria —BAL-LENGER, *Journal L., R. et O.*, May, 1896. M. D. L.

Some Recent Improvements in the Treatment of Laryngeal Disease.

Among the suggestions noted in this resumé are three methods mentioned in the treatment of chronic laryngeal stenosis: (a) Dilatation of the stricture by endolaryngeal operation, until a tube of sufficient calibre can be worn; (b) gradual dilatation by Schroetter's bougies; (c) thyrotomy, in order to remove the obstruction, which operation is to be followed by intubation. The author recommends McNeill Whistler's cutting dilator as a valuable instrument.

Electrolysis is said to be efficacious in the treatment of pachydermia laryngis. The needles are inserted side by side in a holder, and after local anesthesia they are introduced into the hypertrophied tissue. A current of from 10 to 15 milliamperes is passed for about five minutes at a sitting.

Complete cure has followed the repeated application of absolute alcohol in the form of spray in papillomata of the larynx. This therapeutic measure may possibly prove to be an early means of differential diagnosis in cases of benign and malignant growths affecting this region. He further remarks upon the advances made in the treatment of laryngeal tuberculosis, mentioning the surgical as well as other methods which are now practiced. The operation of thyrotomy is carefully considered.—D. BRYSON DELAVAN, *N. Y. Polyclinic*, May 25, 1896. M. D. L.

OTOLOGICAL.

Contribution to the Bacteriology of Otitis Media Purulenta.

Though the number of cases of acute suppurative disease of the middle ear which has been examined is comparatively small, the author gives the result of his observation. He quotes the opinion of Zaufal, who states that "a pure culture of any micro-organism is rarely found in the secretion of otitis media purulenta chronica; as a rule there is a variety of bacteria, particularly in neglected otorrhea and where the secretion is stagnant." The author remarks that the disease furnishes an excellent culture medium for the growth of the most varied bacteria. His tests were made from the discharge of patients who were at the time not under local treatment, so that contamination of the meatus by oil, etc., could be excluded. Like previous investigators, his experiments failed to show any bacteria characteristic of the disease in question. In chronic cases the microscope revealed a great preponderance of rods over cocci. Staphylococci were frequently found, and in the last stage of a chronic suppuration one variety of saprophyte was continually found. Their presence seemed to be characteristic of the chronic form.—LEOPOLD STERN, Metz, *Archives of Otology*, April, 1896.

M. D. L.

Epithelioma of the Temporal Bone.

This peculiar position of the growth occurred in a man, aged 38. The history was one of traumatism. At the age of 12 years, he introduced into his left ear a piece of slate-pencil, which was extracted only after detachment of the auricle. Union was not complete, as a fistula remained in the auriculo-mastoid groove, from which more or less discharge appeared. Three months before his visit, violent pains set in, with considerable infiltration of the affected region. Complete loss of hearing resulted. The meatus was filled by a growth, discharging pus and bleeding readily. After radical operation a cavity remained the size of a hen's egg. Its inner wall was formed by the meninges (strongly driven inwards); its lower limit was formed by the pyramid of the petrous bone (the upper surface of which was almost entirely destroyed); the other boundaries were what was left of the squamous portion of the temporal. Microscopical examination showed the growth to be an epithelioma. It is remarkable that no peripheral symptoms existed, in spite of the cerebral pressure. No eye or face symptoms were observed.—HENNEBERT, *Journal of L., R. et O.*, May, 1896.

M. D. L.

Treatment of Abscesses of the Auditory Canal.

When redness of the canal accompanied by lancinating pains appears, painting the part with a solution of silver nitrate, 1 in 10, or carbolic and glycerine solution, same proportion, is recommended in the hope of arresting the progress of the trouble. An ointment containing mercury and belladonna is also given. If the abscess has reached the second stage an incision is indicated. (Prompt incision at the start may cut short the suffering and prevent any further annoyance.—M. D. L.)—M. COURTADE, *N. Y. Med. Journal*, May 30, 1896.

The Importance of Making a Careful Examination of the Ear, Nose and Throat, from a Medico-Legal Standpoint.

Not infrequently the medical attendant is called to a court of justice to give his opinion in suit for damages. For this reason, as well as to insure a satisfactory result in the treatment of any given case, a careful examination should always be made. The author mentions an instance in which he was called as a witness. The patient's neighbor had advised some pepper and salt application to the ear for the relief of a toothache. The latter symptom was benefited, but an otalgia resulted. The patient in attempting to remove the pepper and salt employed an old toothpick as an evacuator. At the time of extracting the foreign element the patient experienced a sharp pain in the ear. Suppurative otitis media developed shortly after, and she had her neighbor arrested, on the ground that the advice was given maliciously. The author had examined the ear after the traumatism and gave his evidence accordingly. The case was dismissed by the court.—W. SCHEPPEGRELL, *American Medico-Surg. Bull.*, June 6, 1896.

M. D. L.

Acute Hæmatoma of the Left External Auditory Canal.

This case is of interest on account of the sudden onset, with severe pain in the ear and marked deafness. The patient was a singing teacher, enjoying excellent health. He had over-exerted his voice, but that was the only history given. Two days after the commencement of the aural pain the canal was found completely obstructed by a bluish-colored tumor, which fluctuated and was painful on pressure. Incision gave exit to blackish blood. Nothing but the normal elements of blood was found under the microscope. The author thought that an anomalous vascular arrangement, which in consequence of the prolonged strain in the use of the voice, had induced a hemorrhage, giving rise to the hematoma.—ARSLAU, *Journal of L. R. et O.*, May, 1896.

M. D. L.

NEW INSTRUMENTS.

An Electro-Magnetic Tube Extractor.

W. W. Wetherla, of Chicago, describes in the *American Journal of Obstetrics* a new laryngeal tube extractor. This extractor acts on the principle of the electro-magnet. The handle of the extractor is somewhat like those in ordinary use, but has a coil of insulated wire connected with a chemical or storage battery, with an electric pressure of about six volts; when a current passes through this coil, the soft iron core is magnetized and the handle then becomes a strong electro-magnet. As the magnetic action has no influence on tubes made of silver or brass, they must for this purpose be made of iron or steel, or at least have the heads of the tubes made of this metal. Dr. Wetherla has used this tube, and claims that it is practical and easily adapted for the purpose for which it is intended. W. S.

Superfluous Tooth in the Floor of the Nostril.

R. F. Harrell and O. Joachim both report in the *New Orleans Medical and Surgical Journal*, a case of a superfluous tooth in the floor of the nostril. In the case of the former, the patient had suffered six years from great pain, involving the whole right side of the face, and a purulent discharge from the right nostril. The removal of a superfluous tooth, which was found protruding from the floor of the right nostril, caused a subsidence of all symptoms.

In the second case, the superfluous tooth was found accidentally while treating the patient for specific ulceration of the nasal septum. This tooth also proved to be a canine, but had given rise to no symptoms, except a non-purulent discharge from the right nostril. W. S.

An Improved Pus Basin.

Henry A. Alderton, of Brooklyn, describes in the *Annals of Ophthalmology and Otology* an improved pus basin for the ear. The improvement consists of a metallic tube inserted in the bottom of the basin, which, by means of a soft rubber tube, allows the water after syringing, to pass directly into the receptacle under the table.

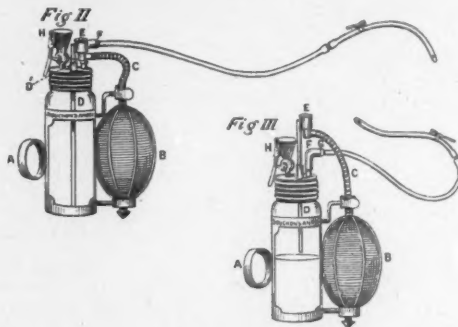
A New Apparatus for Uninterrupted Anæsthesia.

Dr. Edmond Souchon, at a meeting of the Orleans Parish Medical Society (also *Medical News*), describes his new apparatus for uninterrupted anæsthesia in operations on the face and mouth, which will no doubt be of considerable importance in our specialty.

In view of the trouble, anxiety and danger of operating upon the face and mouth, on account of removing the face piece, through which the anæsthetic is administered, so as to uncover the field of operation and enable the operator to proceed, he has devised an apparatus in



SOUCHON'S IMPROVED ANESTHETIZER



which the anæsthetic may be continuously applied, so that the operator may proceed without interruption.

The apparatus which he now uses is an improvement over the one which he had originally devised (Fig. 3). The apparatus as shown in Figure 2 consists essentially of a bottle which contains the chloroform, ether, or any other anæsthetic, a bulb for injecting air, and a flexible

tube, by means of which the vapor is passed through the nostril of the patient into the oro-pharynx. In the original device the air was injected into the flask above the surface of the chloroform, but in order to make it applicable to ether, as well as to chloroform, in the latest device the air-injecting tube is passed to the bottom of the flask, below the chloroform, which very materially increases the strength of the vapor passing through the nasal tube. After the patient has been thoroughly anesthetized by any of the ordinary methods, the face-piece is removed, and the flexible tube is introduced through the nose until it has reached a distance of seven inches, the clasp being then made to grasp the nostril and fix the tube. The end of the tube is then in the lower pharynx, so that the patient inhales the vapor, whether he breathes through his nostril or his mouth. It takes very little vapor to maintain anesthesia when the patient has been well anesthetized.

One advantage of Souchon's Anesthetizer is, that the vapor is inhaled from the oro-pharynx, thus avoiding the irritating effects of the mucous membrane of the nostril, which is now attracting considerable attention. While this apparatus may be used either with chloroform alone, or a mixture of chloroform and ether, or ether alone—the effects are best with chloroform, although Souchon prefers the mixture of equal parts of chloroform and ether.

W. S.

A New Nasal Splint.

Dr. Behrens, in the *Boston Medical and Surgical Journal*, describes a simple device for fractures or operations for deflected septums. After stating the objection to rubber or ivory plugs, he describes his splints, which he makes of cork, in the following manner: A selected cork, $1\frac{1}{8}$ inches long and $\frac{3}{4}$ of an inch thick, is whittled to the shape of an almond, with the points cut off and flattened on the side that is to lie against the septum. The other side is grooved for the reception of the inferior turbinated body. A nasal trephine is now used to hollow out the splint, and after being made smooth by fine sand paper, is coated with flexible collodion, to which iodoform has been added. He claims that this splint is easily made, and cleaned without difficulty by syringing in situ, and can be worn a considerable time without discomfort.

W. S.



repr
read
devo
Spec

spec
in ev
the n

as th

such

enab
and

post
we in

ing c
neces
felt;
facto
repr

been

ANNOUNCEMENT.

After due deliberation, and correspondence with prominent colleagues in every representative medical center, we have decided to publish, and now present to our readers the initial number of, *THE LARYNGOSCOPE*—a 64-page monthly journal, devoted to the Diseases of the Nose, Throat and Ear, for General Practitioners and Specialists.

We will endeavor to occupy a middle ground between the general and strictly special journals, and interest that large body of progressive physicians to be found in every town and city who, from time to time, are called upon to treat diseases of the nose, throat and ear.

The presentation of *THE LARYNGOSCOPE* is an innovation in medical literature, as there is no monthly journal representing these specialties published in America.

Contributions to the Original Department of *THE LARYNGOSCOPE* will be of such a nature as will appeal to both the general practitioner and specialist.

Our Editorial Staff represents each section of the country, and we will be thus enabled to give our readers the special sentiments and gleanings, society proceedings, and clinical progress from every representative medical center.

A staff of Foreign Editors will, by their correspondence, keep our subscribers posted as to the special advances made in their respective countries in the field which we intend to cover.

In this progressive era of "specialization" in medicine, and the ever-increasing demand thus made on the profession for more accurate and delicate work, the necessity of such a journal as we desire to make *THE LARYNGOSCOPE* will soon be felt; and we shall endeavor by every means in our power to make it an influential factor in medical journalism, and a worthy champion of the field of work which it represents.

In order to place the journal within the reach of all, the subscription price has been placed at \$2.00 per year.

We respectfully request the active support of the medical profession.

THE EDITORS.

Ferratin

Lactophenin

THE MERITS
OF OUR

Cocaine

as a first-class, thoroughly reliable preparation,
have long since been fully recognized by the
majority of physicians, surgeons and chemists, and
more especially has it been distinguished by the ap-
probation of:

Dr. CARL KOLLER, of New York.

(Formerly of Vienna, the first to apply Cocaine in Medicine.)

Dr. BENJ. H. PAUL, of London.

Professor Dr. SCHROETTER, of Vienna.

Professor STOERK, of Vienna.

Professor STELLWAG, of Vienna.

Professor Dr. JURASZ, of Heidelberg.

Professor Dr. E. FISCHER, of Strassburg.

Professor Dr. RIEDINGER, of Wurzburg.

Professor Dr. G. DRAGENDORF, of Dorpat.

Dr. K. EMELE, of Graz.

Dr. LEOPOLD LANDAU, of Berlin.

Dr. HERRNHEISER, of Prague.

Professor CASIMIRO MANESSEL. (Pres. of the Italian Section
of the International Medical Congress of Paris.)

Dr. G. B. DANTONE, of Rome.

Dr. AUG. RITTER VON REUSS. (Professor of Ophthalmol-
ogy, Royal and Imperial University, Vienna.)

Professor Dr. SCHESE, of Prague.

Professor Dr. U. MOSSO, of Turin.

Professor H. A. TICHOMIROFF, of Moscow; etc.

Cocaine Hydrochlorate, B. & S., occurs in beautiful, well-
defined crystals, and entirely free from Amorphous mat-
ter, from other Alkaloids, and from Benzoyllecgonin.
It stands MacLagan's and every other Test.

Supplied in 5, 10 and 15 grain vials, and in $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ and 1 oz. bottles.

Dispensed by all Druggists.

C. F. Boehringer & Soehne,

7 Cedar St., New York.

Always Specify

"BOEHRINGER"

(B. & S. BRAND).

papain

Cocaine

